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Acrylonitrile Market 'Flip-Flops' ...

Carbide Opens PE R&D Unit 4

Carbide to Build Separator Plant . . .

Clean Water Bill Pressed

CO₂ Plant Underway for Airco..... 4

Conrail Stock Bid Welcomed 7

Damon Seeks Pariner...... 4

Drug Export Action Urged 3

Du Pont, Allied See Higher Income . 9

Enzon Seeks Okay 33

FIFRA Reauthorization Killed

Sonato Shilts Expected 5

Ozone Hole Puzzles Researchers . . 7

Peroxide Makers See New Uses ... 3

Petro-Lewis Bails Out 9

Pigments Use Grows in Plastics.... 5

Strontium Seen Strong 4

Superfund Approval Relieves 3

Thalidomide Bill Signed 5

Toxic Waste in Cuyahoga 5

UCC Chairman Sees Gains 5

USX Studies Plan..... 9 Waste Rule Under Fire 4

NEWS ABROAD

Europe's Propylene Tight 5

J& J Drug Discontinued in UK.... 24

Miwon to Build Plant In Korea 43

Montedison Drops Pursuit...... 3

Norsk Hydro Proceeds with Mg 9

PE Unit Stated for Telwan 33

Specialties No Panacea 7 Taiwan PE Unit Planned............ 33

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Chamical Prices Start on Page 40

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THE MARKETS

AGRICULTURAL CHEMICALS	3
ALIPHATIC ORGANICS	5,1
AROMATIC ORGANICS	-
COATING MATERIALS	:
DRUGS	:
FINE CHEMICALS	
FLAVORING MATERIALS	
HEAVY CHEMICALS	3,
OILS, FATS & WAXES	
PERFUME MATERIALS	
PLASTIC MATERIALS	

CMR MARKET INDEX

CHEMICAL MARKETING Oct. 24, 1986...... 151.77 REPORTER's market index of Oct. 10, 1986...... 151.23 chemicals and related materials (100=1974 average), based on Sept. 26, 1986.....152.04 97 key commercial chemicals, Oct. 25, 1985......152.41 appears alongside with data for two weeks ago, last month and

CHEMICAL MARKETING CUES

PHTHALIC: A price advance is holding as supplied main 'snug' CARBON BLACK: Makers face new round in of the

CITRIC ACID: Imports are putting pressure of producers

CAMPHOR OIL: Prices firm as productions

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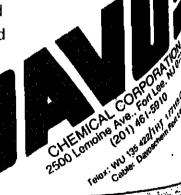
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- 3-Amino-4-Chlorobenzoic Acid
- Acetylene Dicarboxylic Acid
- Diphenyl Disulfide
- Pyruvic Acid
- Squaric Acid
- Piperidine



INSIDE CMR

EARNINGS: Carbide reports gain on divestments, although operating profits are up as well. Chemicals and plastics rise almost seven-fold Page 9

FERTILIZERS: USDA's new and diversion program will cut fertilizer consumption by 5 or 6 percent, but it could have been

ABS: Demand revives after

OZONE: Yet another report on the condition of the Earth's protective ozone shield finds a new villain—the Sun. Chemicals aren't to blame Page 7

weathering Summer doldrums. Despite increased raw material costs, it's reported that prices are holding steady Page 5

TOXIC WASTE: EPA says the amount of toxic waste generated by US industry could be reduced by a third or more by special technology Page 3

MORTON THIOKOL: Despite reduction in aerospace eamings the company's profits are expected to reach at least

METHYLENE CHLORIDE: ndustry group asks Product ^{alety} Commission to make batter use of currently available ····· Page 27

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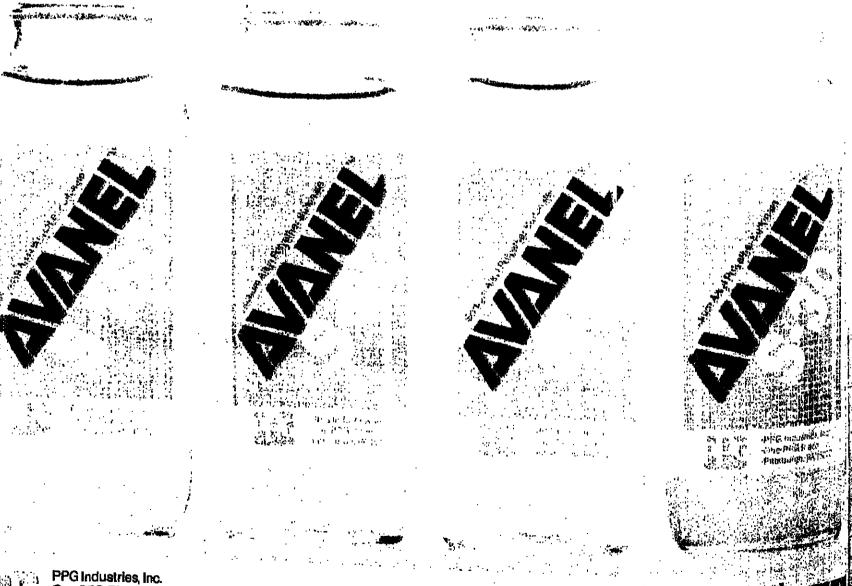
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Gas-Methanol Gets Boost From EPA

Environmental Protection Agency says it has decided to remove certain restrictions from an unleaded gasoline and methanol blend originally developed by El du Pont de Nemours & Co.

In January 1985, EPA granted Du Pont a waiver for Its gasoline-alcohol fuel blend, which contains five percent methanol and 2.5 percent co-solvent alcohols, on the condition that the producers adhere to an evaporative index to limit any possible increases in fuel

EPA said it was not convinced from information then available that using the American Society for Testing and Materials (ASTM) standards as Du Pont proposed would provide sufficient control of fuel volatility and thus the evaporative hydrocarbons from vehicles using the blend.

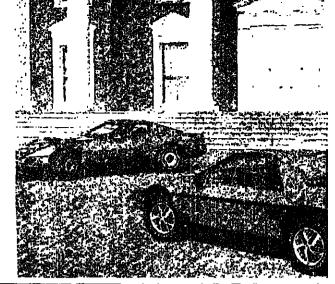
Hydrocarbon emissions contribute to the formation

of ozone, an EPA-regulated pollutant, which causes respiratory problems.

In the decision signed October 22 by EPA Administrator Lee M. Thomas, the agency noted that information obtained since the original decision shows that volatility levels of commercial gasoline on the market today have been rising and are close to the ASTM

The agency said it now believes application of the ASTM standards is sufficient to ensure that evaporative emissions of vehicles using the Du Pont blend will Continued on Page 43

CARS OF THE FUTURE: US agency now believes that use of ASTM Standard will allow methanol-gas automobile engines



Trade Secret Safety **Enhanced by New Law**

egislation amending the Freedom of Information Act (FOIA) to give businesses a greater opportunity to protect trade secrets and other confidential information from disclosure by Federal regulatory agencies.

The measure, which establishes new procedures for determining whether to release business information that has been designated as confidential, is supported by drug and chemical companies.

It requires that companies be notified when an organization or individual files an FOIA request for their business records, some of which may reveal trade secrets exempt from disclosure. The notification period could delay release at least six weeks if the information was found to be public.

Consequently, the legislation was opposed by public interest groups that often file FOIA requests on grounds it would delay release of much information that should be public

But Rep. Glenn English (D-Oka.), the bill's chief sponsor in the House, says it will not permit agencies to withhold any information irrently made public.

This legislation is strictly a procedures bill," he remarked during House floor consideration on September 22. "It only modifies the procedures used by agencies in making

The bill was strongly supported by Chemical Specialties Manufacturers Association, which says the revised measure provides

President Reagan has signed into law companies with "fair and certain" protection and corrects "serious procedural ambiguities" in the original statute.

Under these new procedures, when an outside interest makes an FOIA request for information which has been designated as confidential by the business which submitted the information, the agency must notify the sub-mitter to allow the business to object to dis-

An agency would be given five days to notify the submitter that an FOIA request has been made, and the submitter would be allowed up to 10 days to file objections. The agency then has 10 days to determine whether to comply with the request.

If an objection to disclosure has been made, the agency must wait 10 additional days before releasing the information. Under specified circumstances, these time limits would be shortened if a requester asks for expedited consideration

The agency would not have to notify the submitter regarding a FOIA request if the information was not designated as confidential, if the agency first determines that the request should be denied; if disclosure is required by law or regulation; if the information is already public; or if the agency determines that the information is not confidential, despite its designation.

The measure permits submitters to file so-called "reverse" lawsuits under the FOIA which seek to prevent an agency from releasing submitted information (previously such

Continued on Page 15

Toxic Waste Reduction Posited by US Agency

The amount of toxic waste generated fully implemented, hazardous waste could be by US industry could be reduced by onethird or more through the use of special vironmental Protection Agency.

In a report to Congress on the minimization of hazardous waste, EPA also said it would develop the first national data base on bazardous waste reduction techniques and hat it would also provide technical assistance to help companies achieve waste reduc-

"Industry has significant potential to reduce public health and environmental risks y minimizing its hazardous waste produc-ந்" said J. Winston Porter, EPA as rator for solid waste and emergency

"Such reductions also could reduce dislosal costs and the nation's need for treatment and disposal facilities. As a result, EPA will encourage industry to find ways to reduce both the volume and the toxicity of its Waste, and we will work closely with the states to help foster waste reduction tech-

Mologies," he said.

EPA said a survey of 22 industrial procure sees concluded that if existing techniques are waste-reduction technologies are

Modifying production processes and improcessing techniques, according to Encount for most of the hazardous waste reduction occurring today, said EPA. Only four percent of the total hazardous waste generated in 1981 was recycled, the agency found, leaving a significant recycling potential un-

EPA also found that, up to now, hazardous waste reduction has generally been the result of industry's efforts to decrease manufacturing costs, improve product yields, and comply with existing environmental regulations, rather than overall attempts to reduce waste production

However, new incentives now exist for industry to reduce hazardous waste. Among them, Federal and state hazardous waste regulations, which have significantly increased the cost of disposal.

For example, land disposal of a ton of hazardous waste today averages around \$250. whereas disposal of that waste before the regulations were implemented averaged around \$15. Incineration today costs even more, from \$500 to \$1500 a ton. The more costly treatment technologies,

Continued on Page 24

NPK Consumption Hurt by Farm Program

ber 24 announcement of a paid land diversion (PLD) program for feed grains has reconfirmed analyst forecasts for 1986-1987 fertilizer year NPK consump-

Chemical

Marketing

USDA announced in late September that the 20 percent acreage reduction program (ARP) in effect last year would be continued. In this program farmers who idle 20 percent of their viable land are entitled to participate in government price programs.

The PLD comes on top of the ARP and gives participating farmers the option to idle up to 15 percent more of their crop acreage next Spring in return for \$2 per bushel on grain that normally would have been grown

on that acreage. The Fertilizer Institute, while disagreeing with government farm policy in general, feels that the plan is not as bad as it could have been, given prevailing sentiments. TFI says that talk had circulated at USDA of a PLD as high as 30 percent, owing to enormous political pressure and record grain stocks. Also, TFI notes that the announcement is being made early enough in the year to allow the fertilizer industry time to plan

Analysis, though, were generally not pated a PLD between 10 and 20 percent. Harry Baumes, at Chase Econometrics, Bala Cynwyd, Pa., points out, however, that the \$2 per bushel payment is fairly high and is likely to encourage farmer participation above the historical 85 percent level.

This year's planted acreage for corn, the most fertilized grain, is pegged at 76.6 million acres by USDA. Mr. Baumes expects between 67 and 70 million acres, depending on actual participation levels. During the last significant acreage reduction plan, 1983's payment-in-kind (PIK) program, about 60 nillion acres of corn were planted.

Mr. Baumes feels that corn stocks at the end of the 1986 marketing year (next August) will be at an all time high, between 5.2 and 5.5 billion bushels. He says that the PLD program will bring this down by August 1988, but not below 4 million bushels.

The devastating PIK program was precipi-

billion bushels. The feeling among analysts is that some kind of PLD program will continue for at least another year beyond this one.

Taking the PLD into account, Ken Nyiri, an analyst with Texasgulf, expects total NPK consumption to decline between 5 and 6 percent in the 1986-1987 fertilizer year. Specifically, he sees a nutrient tonnage consumption drop from 4.4 to 4.1 million tons for P205, from 5.3 to 5.0 million tens for K20, and from 11.0 to 10.4 for N. Mr. Baumes is somewhat less optomistic, and sees an average NPK consumption decline closer to 7 or 8 percent

as compared to the previous fertilizer year. Either way, the NPK consumpton drop is not expected to be as severe as the PLD might imply. This is partly because farmers are expected to idle less productive, and con-sequently less fertilized, land, and partly be-

Continued on Page 42



FERTILIZER CONSUMPTION: Pederal farm programs are culting into demand for fertilizers.

November 3, 1986

CHEMICAL MARKETING REPORTER

One PPG Place

Pittsburgh, PA 15272

Carbide's Kennedy Sees Wave Of Transnational Partnerships

Transnational partnerships that share marketing, research and production are the wave of the future, or so says Robert D. Kennedy, president and chief executive officer of Union Carbide Corporation. Speaking last week before the American Chamber of Commerce in Tokyo, Japan, Mr. Kennedy said joint ventures are "changing the way multinationals operate in an integrated worldwide market

place." The Carbide president added that such partnerships are necessary in a world economy characterized by slow

"The rapid pace of technological change and the enormous costs of developing, manufacturing and distributing new, advanced products in a global market virtually require transnational cooperations," he said.

Citing examples of such cooperation, Mr. Kennedy pointed to partnerships involving Toyota and General Motors, AT&T and Olivetti, and Nissan and Alfa Romeo and

He predicted that the next big trend could be transnational corporate alliances investing in growth opportunities in developing nations. "That's a way to expand our markets instead of fighting for larger shares in the slow-growth industrial world," he said.

Turning to the chemical industry, the Carbide executive noted that Japan's chemical firms are facing the same type of problems US companies have been grappling have been sold since 1979, will significantly with including overcapacity, weak pricing, import competition, currency woes, declining sales and lagging exports. He went on to note that the Japanese are responding to these problems in the same way US firms Continued on Page 26

Biologics Exemptions Allowed by USDA

Department of Agriculture has set up new procedures whereby veterinary biologics manufacturers who sell their products for export, or for use within the state where they are produced, may apply for temporary exemptions from Federal licensing standards governing the products.

Last year, amendments were made to the Virus-Serum-Toxim Act requiring veterinary biologics sold intrastate or for export to meet the same USDA licensing standards for safety, purity, potency and effectiveness that

apply to veterinary biologics sold interstate. Before the amendments, veterinary biologics sold intrastate or for export were not bject to Federal licensing requirements. The amendments allowed a four-year exemption period, and in some cases an additional 12-month extension, to give manufacturers time to bring intrastate and exported products up to Federal standards.

An exemption would allow a manufacturer to sell the exempted product for export or within the state where it is produced until Jan. 1, 1990. Until that date, an exempted product would not be subject to Federal licensing provisions.

To claim a four-year exemption for an intrastate or exported veterinary biologic, manufacturers must file a product licensing application form (APHIS form VS14-3) for the product by Jan. 1, 1987.

Gasohol Victim Of 'Gas' Slump

A report from the Department of Agri-culture indicates that US gasohol production might be the latest victim of lower

The report says the cost of producing gasohol is more than three times the cost of the current wholesale price of gasoline. Gasohol is nine parts gasoline and one part ethyl alcohol, a derivative of corn.

Of the dozen othyl alcohol plants that receive USDA loan guarantees, nine are bankrupt or in liquidation, prompting the USDA to argue against further subsidies

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for gasohol production. However, the National Corn Growers Association rejects the conclusions of the USDA report. "What they are forgetting is that we could have oil prices that would make gasohol competitive in the near future," says an NCGA official.



E. I. du Pont de Nemours & Co. plans to construct a manufacturing plant to produce perfluoroelastomer parts in Utsunomiya, Japan. The new plant will enable the company to meet an expected 20 percent annual increase in demand for "Kalrez" parts in the apanese market.

The plant, scheduled for completion at the end of this year, will be the first "Kalrez" facility outside the US.

"This expansion is a key element in Du Pont's commitment to supply our customers with high-performance 'Kalrez' parts in worldwide markets," says Ernest E. Woodacre, director-engineered parts. "Producing 'Kalrez' parts in Japan, where they increase our ability to offer products that meet local requirements, provide technical services, and ensure local quality control and a steady supply.

"Kalrez" perfluoroelastomer parts have greater chemical resistance and thermal staility than any other elastomer. They are used as fluid seals in the chemical, semiconductor, chemical transportation, oil manufacturing and aircraft industries.

Currently manufactured in Newark, Del., "Kalrez" parts are available through author-

Dioxin Burn Test To Use Small Unit

The first small-scale burn of dioxin-contaminated soil by a commercial mobile incinerator using infrared technology at a superfund site will take place at the Tibbetts Road site in Barrington, N.H., according to Environmental Protection Agency.

It is expected to take two weeks, at a cost of \$150,000 in emergency funds. Residual ash of the four cubic yards of contaminated soil will be tested to determine dioxin destruc-

The mobile incinerator, owned by Shirco Infrared Systems, Inc. has been tested in Missouri and issued a research permit by EPA.

Additional emergency funding of \$700,000 was authorized for a permanent waterline hookup for the 26 families whose wells have been contaminated at the New Hamsphire

Drug Tampering Draws Jail Sentence

A Federal court in Orlando, Fla., last week sentenced Edward Marks to 27 years in prison for criminal tampering with consumer products. He was found guilty of putting rat poison in "Contac" and other non-prescription medicines made by SmithKline

Beckman Company.

The Proprietary Association, an industry trade group, credited a new Federal antitampering law. "Effective law enforcement, including jail for offenders, is the key to deterring tampering," the association said in a

Westlake Expands

Westlake Plastics Company of Lenni, Pa., says it has increased its capacity to produce high temperature and high strength thermo-plastics. Westlake's line of materials includes polysulfone, polyethersufone, polyetheretherketone and polyetherimide in a range of rod, film and slab sizes and in custom sizes of tube and profiles.





James W. Montgomery Jr. has been appointed director of operations of the Widger Chemical Corporation, a unit of BASF/Inmont. He had been turing Manager for the unit since 1981.

PVC Plant on Way For Canadian Oxy

Construction of a new \$13-million PVC compounding plant by Canadian Occidental Petroleum Ltd. is under way in Tottenham, Ont., a community located about 25 miles Northwest of Toronto.

Scheduled for completion in early 1987, the 70,000-square-foot facility is designed to produce PVC rigid and semi-rigid sheeting and film as well as PVC compound products for North American and European Markets. The complex will include a research and development center, and will use computerized manufacturing techniques.

"Presently, steelwork is up, concrete is being poured, and siding is being applied," says a company spokesman. "We expect to be n commercial production by early 1987."

The plant will have two self-contained mixing systems. The compounding operation will produce compound in the form of pellets or dry blend for the PVC bottle market, including FDA-approved compounds for food and drug packaging.

Other compounds will be targeted towards pipe fittings, electrical conduit, and various PVC profiles such as windows, patio furniture, window blinds and furniture trim.

A second system will turn out rigid and semi-rigid PVC sheeting for packaging such as blister packs used for food, pharmaceuticals, medical devices and hardware prod-

Chemicals, Textiles Cited for Safety

The American chemical and textile industries are the top two in safety among 42 industries ranked by the National Safety

The textile industry for 1985 reported only J.46 days away from work and deaths per 100 employees. The chemical industry was second with a rating of 0.52. The average of all industries was 1.98 days from work and deaths per 100 employees.

Ethyl Ibuprofen Will Be Expanded

Ethyl Corporation, the only major U.S. manufacturer of the active ingredient in ibuprofen pain-relievers, says it has begun a significant expansion of its Orangeburg, S.C.,

The move will increase Ethyl's total capacity for the ibuprofen active ingredient to well over 2 million kilograms per year by mid-1987 to meet growing demand for the product. The plant is capable of further expassion as necessary to meet future requirements for ibuprofen.



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Kenneth W. Butterworth, who has been ap-pointed chairmen of the board of Loctite Corpo-ration, succeeding Robert H. Krieble.co-founder of the company. Mr. Butterworth will continue to act as president and chief executive officer of

Drug Makers Target Japan As Big Outlet

Commerce Department statistics indicate that Japan was the US pharmaceutical industry's largest export market last year, purchasing nearly 22 percent of all US drug exports, totalling

Japan was the top purchaser in all types of drugs—blologicals, medicinals and botanicals as well as finished pharmaceutical preparations, according to Commerce.

West Germany was the American industry's second largest customer, with \$218.5 Million in nurchases

The largest source of drugs for the US was the United Kingdom. The UK exported \$366.2 million worth of pharmaceuticals to the US, accounting for nearly one-fifth of all US drug

West Germany was the second largest supplier, providing \$210 million, or 10.6 percent

Commerce reports that the UK provided more than one-third of all finished pharmaceutical preparations imported by the US, and more than 18 percent of America's inported active ingredients.

Sweden was the leading supplier of biologicals to the US, shipping more than one-third of the total \$162.7 million imports of these

Cyanide Law **Drawing Praise** From OTC Firms

A trade group representing manufacturers of non-prescription medicines last week called a new law to study the sale and distribution of poison cyanide "the most positive congressional action le prevent harm from product tampering since the Federal Anti-Tampering

The cyanide provision orders Environmenla Protection Agency to determine the feasibility of tighter registration requirements, stinctive coloring for cyanide.

The new law also asks EPA to study and feport within six months to Congress on present sources of cyanide and distribution and sales methods.

"This legislation may not be the final ancontrol of cyanide manufacture and distribulinn," says James D. Cope, president of the roprietary Association.

President Reagan enacted the cyanide provision by signing into law the AntiDrug

ABS Rebounds; **Prices Seen Holding Despite Higher Costs**

Demand for ABS (acrylonitrile butadi- 3-cent-per-pound TVA's are still in effect. ene styrene) resin has rebounded after a These price cuts were essentially passparticuarly weak summer. Producers note that Summer is usually a slow season for this market, with refrigerator and automobile manufacturing plants shut down for one to three week vacations. August demand was low even by ordinary standards, and domestic sales fell 2 percent from the previous year-todate levels.

Products blame this on customer inventory drawdowns. September came in strong, they say, citing preliminary SPI figures for the month which show sales up 9 percent over August's low and production up 13 percent. Based on October sales, the domestic market will definitely see growth of 2 to 3 percent, and possibly 4 percent this year, they say, bringing the US total to between 1.05 and 1.1

Despite 4-to-6-cent-per-pound increases in the cost of styrene monomer, which accounts for 55 to 60 percent of the total end product. producers report that March and April 2-to-

which fell from 31 cents per pound in January to 18 cents per pound in April. Currently, monomer is selling for 22 cents per pound to 24 cents per pound, and additional increases, prompted by firming crude values, have been announced for November

One producer explains that styrene increases have been more than offsel by lower acrylonitrile and butadiene costs.

Prices for acrylonitrile, which accounts for about 30 percent of the total end-product, fell 3 cents per pound through August, and are continuing to fall, while prices for butadiene have plunged 14 cents per pound, from 28 cents per pound in February.

Styrene costs remain the primary concern. Although producers would like to raise ABS prices, they say higher prices would be imossible to effect now, given an intensely competitive domestic market. Customers would reject increases, one producer explains, because ABS did not immediately fol-Continued on Page 41

Lonza Charged on TSCA

Environmental Protection Agency en- to be made known to EPA in 1982. The forcement officials have issued a civil complaint with an assessed penalty of \$1.46 million against Lonza, Inc. of Long Beach, Calif., for failure to submit completed studies, as required by the Toxic Substances Control Act (TSCA).

The action is the first civil complaint filed against a firm for a violation of TSCA section 8, which requires submission to EPA of health and safety studies of any chemical substance deemed potentially toxic

This applies to studies by manufacturers, processors or distributors of the chemicals, even when there are negative

The studies in question were in the form of aggregated air monitoring data evaluated for worker safety exposure and were

agency says the failure to report these studies became known during a routine inspection in September 1985.

EPA cannot release the name of the chemical substance or details of the studies because the company declared them confidential business information under section 14 of TSCA.

In another TSCA case, EPA has proposed penalties of \$125,550 against Envirosafe Services of Idaho, Inc. for allegedly violating the act in the handling of PCB wastes at a Grand View, Idaho facility.

The complaints include improper burial, spills, removal, tank repairs and storage. Two previous PCB violations were resolved in 1983 and 1984 with the company agreeing to pay fines totalling

Patent Protection Bill Aids Canadian Drug Firms

Legislation to extend patent protec- name firms have agreed to boost research tion for brand name drugs in Canada is expected to be introduced by the Canadian government within a matter of weeks, according to government and industry spokesmen

Introduction of the bill has been delayed for a variety of reasons, but the measure is expected to pass through Parliament essentially intact.

The bill would blunt the effects of Canada's compulsory licensing law, which requires brand name firms to license their patents to generic firms for a royalty fee. Generics currently account for about 10 percent of Canada's prescription drug market.

Pharmaceutical Manufacturers Association of Canada, an industry trade group repobtain repeal of compulsory licensing, but the patent protection legislation provides the next best thing. Half of PMAC's members are subsidiaries of US drug firms.

Under the bill, brand name firms would be granted up to 10 years of market exclusivity for their products before being required to license generic copies. This "nets out to the same thing" as repeal of compulsory licensing, PMAC observes, because the early years of a drug's 17-year patent life are lost during the regulatory approval process.

In return for market exclusivity, brand

and development spending in Canada and keep future price increases within the bounds of Canada's consumer price index. Companies could lose patent protection for their products if price increases exceed the CPI.

Compulsory licensing was implemented in Canada in 1969 as a way of combating high drug prices, and has been strongly supported by consumer groups, but brand name manufacturers have argued that the program has stilled investment in pharmaceutical research and developmen

After a series of delays, the government sent its patent protection measure to Parliament on June 27, but in a foul-up, for which there is apparently no official explanation, the courier from the governor general arrived at the House of Commons after Parliament had already recessed for the Summer.

The bill was then to be introduced in September, when Parliament was originally scheduled to reconvene, but instead, a new session of Parliament opened in October.

Parliamentary formalities, including the Queen's speech, further delayed the start of legislative business. "A whole lot of ducks had to get lined up," a government spokesman observes last week. He said, however, that Harvie Andre, Minister of Consumer and Corporate Affairs, is expected to introduce the patent protection measure within a matthe patent protection measure within a mat-

Drug Makers Pledge More On Research

The International Federation of Pharmaceutical Manufacturers Associations (IFPMA) concluded its 13th Assembly with a pledge by its new president, Warner-Lambert Company chairman and chief executive officer Joseph D. Williams, that the industry will continue its research effort as a means to improving health care for people throughout the

"The industry recognizes that its quest to develop new and better medicines is neverending," said Mr. Williams. He observed that the privately owned research-based pharmaceutical industry has developed "nearly all the new medicines that have helped to prolong life and improve its quality in the last 50 years. This program would not have been achieved in the absence of an economic system that fosters competition," he added.

Mr. Williams succeeds Peter W. Cunliffe, principal executive officer of ICI's international pharmaceutical business.

Mr. Cunliffe told delegates that the industry is "increasingly being challenged" by critics and that it must find ways to ensure that the complexity of its operations is fully

"The discovery and development of new medicines is not inevitable," he said. "It depends on scientific brilliance, unique teamwork and a very great deal of money. To approach questions on the use of medicines with oversimplification that some 250 drugs are all that are needed is as irrational as it is potentially damaging for future invention and the health and welfare of the people of the world."

Dr. Richard B. Arnold, IFPMA executive vice-president, outlined the industry's commitment: "A continuing search for new, better medicines; meeting the highest standards of safety, quality and efficacy; providing ac-curate relevant information to support the

Continued on Page 13

Air Products Cogeneration Is Under Way

Air Products & Chemicals Inc. has begun construction of a 49-megawatt coalfired cogeneration plant at Stockton, Calif. The facility will provide steam and electricity to CPC International Inc. and electricity to Pacific Gas & Chemical Company under 20-year contracts.

The \$100-million plant will be built on a site adjoining CPC's corn wet milling plant. CPC will obtain all of its electric power from the facility, and PG&E will purchase the balance of the output.

The plant is scheduled to be completed in the second quarter of 1988 and will incorporate a circulating fluidized bed boiler which will be supplied by Pyropower Corporation of San Diego, Calif.

The cogeneration plant will mean "significantly lower energy costs for the Corn Products plant here, and will greatly strengthen its ability to compete with corn wet milling plants located in other parts of the country where energy costs are lower," according to Fred C. Meendsen, president of CPC's Corn Products unit.

With the addition of the facility at Stockton, all three of CPC's US plants will be served by cogeneration plants.

Air Products says the plant is representative of the cogeneration opportunities it is seeking on behalf of industrial customers who need low-cost and assured electrical power supply. The company recently formed a marketing joint venture with Pyropower for developing and operating industrial cogeneration facilities.

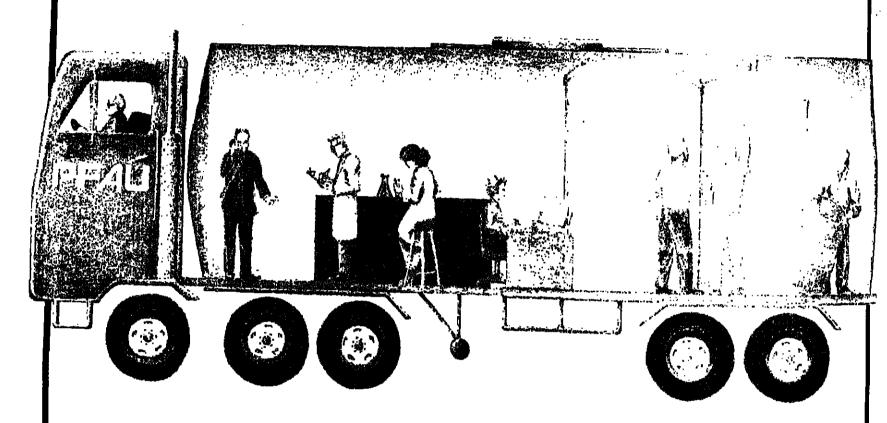
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Detergents in Europe

ctants and non-phosphate detergent builders can be expected as consumer product formulations change in many

This rapid growth in consumption of raw materials for detergents, fabric soft- phate builder systems in detergents. eners and personal care products is forecast in a study just completed by Colin A. Houston & Associates, Mamaroneck, N.Y. Overall consumption of surfactants

present level of 1.4 million metric tons worth \$1.7 billion. According to the Houston study, a com-

Consumption growth rates of 10 to 15 pletely revamping the image of their percent annually for some specialty surproducts as well as introducing major re-

Concern over phosphate's role in eu-trophication has led to voluntary and legslated reductions in STPP consumption and rapid growth in the use of non-phos-

Concern over biodegradation has led to voluntary and legislated reductions in ehold products and growth in alcohol will continue to grow to 1995 from its ethoxylate consumption.

In personal care products, substantial increases in use frequency of shampoos and shower products is causing very plex set of economic, political and com- strong demand for mild surfactants.

Product trends and growth rates vary

Superfund Suit Alleges Rules Are Too Generous

filed suit against the Department of the Interior, alleging that regulations written for the superfund hazardous waste law will allow polluters to escape paying appropriate damages when they injure fish, wildlife, and other natural re-

Interior's regulations, released in August, determine how much money state and federal agencies can collect from either polluters or the Superfund for injuries to fish. wildlife, and other natural resources caused by toxic leaks and spills. Every year, accordng lo government data, there are about 10,000 reported leaks of toxic substances into

Calling Interior's regulations "the stepchild of the superfund program," NWF executive vice-president Jay D. Hair said, "laterior has failed in its duty to protect and restore our nation's natural resources. Conservationists had to sue the department to issue the long-overdue rules. Now it's clear that Interior hopes to minimize the amount of money available to restore damaged resources, from national parks to endangered

Both the Environmental Defense Fund and the Public Citizen Litigation Group joined NWF in the suit, which takes the form of a

the rules in several areas, alleging that they:
• Fail to rquire that sufficient funds will be available to restore or replace natural resources damaged by toxic leaks or spills, or to acquire equivalent resources where restoration or replacement is impossible.

· Illegally bar state officials from obtaining a "rebuttal presumption" of the correctness of their damage assessments when a polluter challenges the state's conclusions.

• Unlawfully allow the polluters to per

form the entire assessment of the money they owe for damage to natural resources than they themselves cause.

 Unlawfully require that the "market value" of resources, including national parks, wilderness areas, and endangered species, will measure damages, rather than the actual value of the resources to the pub-

 Arbitrarily deny environmentalists and citizens the same rights to participate in decision making that are given polluters.

 Unlawfully suggest that damage to natural resources suffered by individual members of the public is not compensable under

significantly strengthened by the 1986 superfund amendments signed into law on October 17. Congress severely criticized the natural resource damage rules in enacting the new petition for review in the US Court of Appeals in Washington, D.C. The suit will challenge versed some provisions of the rules. amendments, and Congress specifically re-

Grace Retail Outlets Sold To Management Investors

W.R. Grace & Co. has completed the sale of its Home Quarters Warehouse restaurant group. business for more than \$10 million to a management investor group led by Bernard R. Kossar, senior vice-president of Grace's retail group.

Grace will retain a 25 percent interest in the retail business, which serves the do-it-fets in Virginia Beach and Hampton Bays, Va., Columbia S.C. and Tallabarras File. a., Columbia, S.C. and Tallahassee, Fla. Financing for the sale was provided by Cllicorp Industrial Credit Inc.

The transaction is part of a corporate restructuring program initiated by Grace last ther which includes the company's departure from retailing.

Grace sold its interest in Herman's World Fiat Affiliate Buys of Sporting Goods in April for \$227 million and its Home Centers West unit in June for approximately \$185 million. Last month, the company reached an agreement to sell its
J.B. Robinson Jewelers business for approxi-

Also in October, the company reduced its corporate staff in New York City and sold its bearborn Engineering Group. Grace plans to interest in Taco Villa, its fast food operation,

restaurant group.

The restructuring and cost-cutting moves were prompted by the repurchase by Grace of 26 percent of the company's stock from the Flick Group of West Germany.

Grace has been considered vulnerable to a

takeover attempt ever since Flick sold its 26 percent holding. Speculation about a possible takeover attempt has focused largely on Samuel Heyman, chairman of GAF Corporation, who launched an unsuccessful, but profitable, bid for Union Carbide Corporation after his winning proxy fight to gain control of

Into Clinical Sciences

Bioengineering International BV, an affiliate of Italy's worldwide Fiat automotive group, has purchased 4 million shares of Clinical Sciences, Inc., a manufacturer of medi-

Ozone Depletion Now Blamed on Sun

sun, not chlorofluorocarbons, may be responsible for the potentially dangerous depletion of the atmospheric ozone layer above the South Pole, says a study published Thursday.

According to the analysis by the National Aeronautics and Space Administration, an intense peak of solar activity that ended in late 1979 and early 1980 produced a number of complex chemical reactions that led to a global decline in atmospheric ozone levels and a major depletion over Antartica.

Because the sun's activity has now subsided, the ozone may be returning to its nor-mal state, says Linwood B. Callis, an author of the NASA study

Mr. Callis says he has found satellite data suggesting a climb in ozone levels this year, lagging by several years behind the decline in

If the solar theory of ozone destruction proves to be correct he says, "This will be the first indication that a solar cycle can have

Just one week earlier, a US research team n Antartica said they had found strong evidence against theories that high solar activity or wind currents were the cause of the

But other US scientists questioned whether those hypotheses could be ruled out on the basis of the preliminary data collected by the

New satellite data suggests that the National Oceanic & Atmospheric Adminis tration expedition.

Ozone, an ionized form of oxygen found in the upper atmosphere, shields the earth from some of the sun's harmful ultraviolate radia-Continued on Page 64



Fertilizer Retailer Study Finds Dry Operations Cheaper

costs of operating a retail fertilizer business reveal that dry-only operations incur \$48.66 per ton, fluid-only plants experience costs of \$65.57 per ton and operations dealing in both liquid and dry products have costs of \$55.99 per ton, on

These findings were part of a first-ever analysis of retail business costs, funded by the Fertilizer Institute and conducted by the l'ennessee Valley Authority's National Fer-

ilizer Development Center. The just-released information reports costs per ton for various functions within the retail operation, but does not include the expenses incurred for raw material purchases or in-bound transportation freight. A summary of the report's findings will appear in an upcoming issue of "Fertilizer Progress," a

bimonthly publication of the institute.

higher average investment requirement per ton of business, reflecting a broader range of services. Investment costs - the amount required for a new entrant to buy and operate a firm - are \$57.30 per ton for dry, \$73.25 for liquid and \$86.80 for combined operations.

In all firms, expenses for salaries and de preciation represent approximately half of all costs. On the basis of cost by function, expenses associated with fertilizer application services are dominant across all firm types, posting \$22.41 for dry-only, \$26.85 for liquid and \$27.57 for both.

These and other findings are the product o on-site interviews and analysis of confidential expense data from 46 retail fertilizer dealerships — 23 handling liquid, 12 handling dry and 11 handling both product types. In each case, firms had sales approaching or exceeding 10,000 tons of fertilizer annually The Tennessee Valley Authority will publish Of the firms studied, liquid-only and com- a comprehensive analysis in early 1987.

Drug Bill Pressed by Coalition As Administration Voices Fear

pany executives and health-care professionals called on President Reagan last week to sign legislation designed to compensate children in jured by vaccines and

promote exports of prescription drugs.

The omnibus health package, a bill which addresses nine major US health issues, was passed shortly before Congress adjourned.

But despite unanimous congressional ap-royal and full support of the health research Administration officials are split over whether the package should be veloed due to the section that creates a vaccine-injury compensation fund.

Commerce Secretary Malcolm Baldridge, US Trade Representative Clayton Yeutter and Health & Human Services Secretary Otis Bowen are urging President Reagan to sign the package because it would allow drug and biotechnology companies to export US-man-ufactured products not yet approved for use here to Japan and 20 European nations that

A coalition of lawmakers, drug com- have licensed the drugs for sale within their Sen. Orrin Hatch (R-Utah), told a news con-ference that without this change in US export

law. American firms will move plants overseas, costing the US "thousands of jobs and hundreds of millions of dollars in exports." He also noted that the bill's drug export

provisions "make it the only non-protection-ist trade legislation passed during this session of Congress." and pharmaceutical communities, Reagan trial Biotechnology Association, said a presi-

dential veto could cause the US to lose its world leadership in the field of blotechnol-

"This change in the law will do more to maintain US leadership in biotechnology than any other action I can think of, and it's not a trade restriction," Mr. Godown said.

"It will halt the loss of leading edge technology in this field and it will keep jobs and capital investment at home. At a time when Japan has made it a top priority to take over Continued on Page 43

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DELTA DISTRIBUTORS-TEXTILE CHEMICAL-SOCO-WESTERN

News Capsule

Monsanto Signs Accord

Monsanto Enviro-Chem Systems Inc has signed an agreement with Edmeston AB to use a new stainless steel in the acid systems of its sulfuric acid plants. The sleel will replace cast iron pipe, heavy brick-lined steel vessels and other materials currently in place, Monsanto says.

Grace Unit Invests

Grace Ventures Corporation, the venture capital subsidiary of W.R. Grace & Co., has invested \$500,000 in Vitaphore Corporation, a San Carlos, Calif., devel-Corporation, a San Carlos, Calif., developer, manufacturer and marketing of proprietary medical devices used to prevent, diagnose and treat infections associated with invasive and surgical procedures and wound management. The investment is part of a \$6.25 million venture capital financing.

Dow Unit In Shift

CD Medical Inc., a wholly-owned subsidiary of Merrell Dow, has become an operating unit of Dow Chemical Company, CD Medical, formerly Cordis Dow, manufactures membranes and artificia idneys as well as medical equipment. CD Medical management now reports to En-rique J. Sosa, commercial vice-president for specialties, who is responsible for all of Dow's membrane-related businesses.

Alcan Contract Ratified

Members of Local 142 of the Alu inum, Brick & Glass Workers Union which represents 450 employees at Alcan Ingot & Recycling's Sebree, Ky., smelter have ralified a new three-year contract, ending a 143-day strike. Alcan did not dis-close the terms of the contract but described it as "concessionary."

Rohm & Haas Service

Rohm and Haas Company has introduced a new water treatment, program. which includes a group of managers who provide research, marketing and sales in-iormation to water treatment chemical formulators. The company says it can now respond more quickly to questions and problems concerning the use of polymers in boiler and cooling water treat-

^{NL} industries Has Loss

NL Industries Inc., New York, had hird-quarter net loss of 27.9 million or sales of continuing and discontinued oper-alions of \$308.2 million. In the third quar-ter a year ago, the company had net in-come of \$5 million on sales of \$360.4 lion. Because of continued weakness in domestic drilling activity and associated pricing pressure, the company petroleum service business recorded a operating loss of \$31.4 million.

Blair Recommends

William Blair & Co., of Chicago, is recommending the shares of National Sanitary Supply Company, distributor of a widerange of sanitary maintenance products to a broad customer base in the Southwestern US. Although a small company, it is among the largest in a big, pany, it is among the largest in a big, growing but fragmented industry, commented Thomas S. Postek, industry analysis

Amoco Declares Dividend

Amoco Corporation's directors have de-clared a regular quarterly cash dividend of 82.5 cents per share on the common slock panels. slock, payable December 10 to holders on November 5. Amoco (formerly called Standard Oil Company of Indiana) has paid regular quarterly dividends for 76

Reichhold Forms

The Chemical Coatings Division of Reichhold Chemicals, Inc. in Pensacola, Fla., has formed a new business unit—General Coatings Products, with Clifford Q. Schneider as vice-president and general manager. The unit will "further tap the potential within existing markets for our products lines," stated James J. Compass, president of Reichhold's Chemical Coatings Division.



Morton Thickol Sees Earnings Gain in 1987

Despite the reduction in aerospace earnings due to the Space Shuttle failure in February, Morton Thiokol, Inc., expects its earnings in fiscal 1987 to at least match the \$2.80 per share earned in fiscal 1986, ended June 30, and possibly reach \$3.00 per share, Charles S. Locke, chairman and chief executive officer, told a luncheon meeting of the New York Society of Security Analysts last week.

If \$2.80 is topped in 1987, it will mark the thirteenth consecutive year of earnings growth for the Chicago based producer of salt, specialty chemicals and aerospace products and services.

Mr. Locke told the analysts that Morton Thiokol's return on stockholders' equity is hovering just a shade below the company's high goal of a 20 percent return. The last recorded figure was 18.9 percent.

Long-term debt of Morton Thiokol has been gradually reduced from 35 percent in 1976, to only 4 percent now, about the lowest of any company in an industry in which the average has usually been in the 30-to-40-per-

This low debt represents a huge borrowing power which could be used for rapid expansion or a major acquisition. When asked by an analyst about the possi-

bility of "leveraging up," Mr. Locke indi-Continued on Page 45

Monsanto Eyes Sale of Assets To Indiana Firm

Monsanto Company is negotiating with Ball Corporation of Muncie, Ind., for the sale of its assets associated with Monsanto's plastic container business.

The container business, which makes and sells plastic bottles, has approximately 1,500 employees at nine locations in the US. If the negotiations result in the sale of the business, substantially all of the employees would be expected to be retained.

Earl N. Brasfield, group vice-president of Monsanto, says, "Our container business is profitable but no longer fits into our business strategy.

"The reason we have entered these negotlations is because our container business appears to be of greater value and strategic importance to Ball Corporation," Mr. Brasfield adds. "We hope these negotiations will result in a definitive agreement within the next month."

The container business has administrative and support personnel at Monsanto's headquarters in St. Louis plus a technical center in Bloomfield, Conn., and manufacturing plants in St. Louis, Ligonler, Ind., Sharon-ville, Ohio, Anaheim, Calif., Kenliworth, N.J., and Deep River and Stonington, Conn.

Carbide's Income Up **On Divestment Gains**

Union Carbide Corporation had thirdquarter net income of \$290 million, reflecting a gain of \$252 million from disposal of businesses, mostly the sale of the home and automotive products busi-

This compares to a net loss in the compara-ble 1985 period of \$543 million, which included special charges of \$620 million from the corporation's restructuring program.

On a comparable operating business, including continuing and discontinued businesses, income in the latest quarter amounted to \$38 million, as compared with \$58 million in the 1985 period. Operating profit from continuing operations in the re-cent quarter was \$188 million, a 57 percent increase from \$120 million a year ago.

Operating profit of Union Carbide's Chemicals & Plastics business in the third quarter rose to \$210 million from \$32 million a year, while profit in industrial gases edged up to \$70 million from \$65 million and carbon product earnings increased to \$9 million from \$4 million. Losses were recorded in specialties and services.

In other earnings reports, A. H. Robins Company, diversified health care concern based in Richmond, Va., reported that its operating earnings in the quarter rose 31

were down 8 percent to \$24,959,000. The net earnings comparison was distorted by an extraordinary gain in the 1985 quarter.

E. Claiborne Robins, Jr., president and chief executive officer, said the principal contributors to 1986 growth in sales and operating earnings were generic injectables produced by the company's Elkins-Sinn subsidiary; non-prescription formulas of "Dimetapp," a cold and allergy product, "Micro-Extencaps," a prescription potassium chloride supplement; and the "Robitussin"

family of cough preparations.
In Princeton, N.J., Squibb Corporation said Its net income per share increased 15 percent from a year ago to \$1.55 in the third quarter, despite a charge to earnings of 22 cents per share, reflecting inventory adjustments and a restructuring of the medical systems busi-

In line with previously announced decisions, these businesses - Westmark International, Inc., and Charles of the Ritz Group, Ltd. — are being reported as "businesses to be disposed of.

Richard M. Furlaud, chairman and chief executive officer, said that plans to distribute Westmark as a tax-free dividend to shareholders and to sell Charles of The Ritz Continued on Page 13

Borg-Warner To Sell Unit

week that it plans to sell its Industrial Products subsidiary by the end of this year as part of a corporate-wide restructuring program.

"Industrial Products is a good business long-term and a very well-manned company, but it does not fit with our plan to become a more focused company," said Clarence E. Johnson, Borg-Warner's president and chief executive officer.

Borg-Warner obtained Industrial Products in 1955 as part of its acquisition of Byron Jackson Pump. Industrial Products produces mechanical seals, aerospace actuators and large centrifugal

Based in Long Beach, Calif., Industrial Products recorded an operating profit of \$12.9 million for the first six months of this year, representing about 7 percent of Borg-Warner's total operating profit for the period of \$182.9 million. Sales of \$139.2 million represented about 8 per- Products' employees.

cent of Borg-Warner's total sales of \$1.8 billion in the first half of the year. In September, Borg-Warner's board au-

thorized the repurchase of up to 15 million of the company's shares on the open market and through private purchases. At that time, the company said funds for the stock buyback program would come mainly from the restructuring program. Borg-Warner, along with many others, is rumored to be a possible takeover target of GAF Corporation.

"We are continuing to examine our businesses and have identified others, in addition to Industrial Products, which will be sold." Mr. Johnson said last week.

The company said its plans for the sale of Industrial Products envisions continuity of current management, strategies, programs and products to assure no disruption of service to the group's customers and minimal impact on Industrial

Vulcan's Chemical Business Hurt by Imports, Soft Prices

lines of business, construction materials, the biggest and the most profitable the New York Society of Security Analysts last week.

Vulcan's chemical business, consisting of chlorine-caustic soda, chlorinated solvents, pentachlorophenol and various other commodities, is reaping the benefits of a new cogeneration facility at Geismar, La., but this is still outweighed by negatives in the chemical marketing picture.

The main problem continues to be high levels of imports despite the vastly improved conversion rate on the dollar, although this is being partly offset by an increase in US exports of chlorinated solvents as the lower value of the dollar is reflected in reduced prices of US-produced solvents when converted into local currencies, officials said.

Herbert A. Sklenar, president and chief executive officer, said that chemical shipments and earnings in the 1 percent quarter will exceed the deeply depressed results of

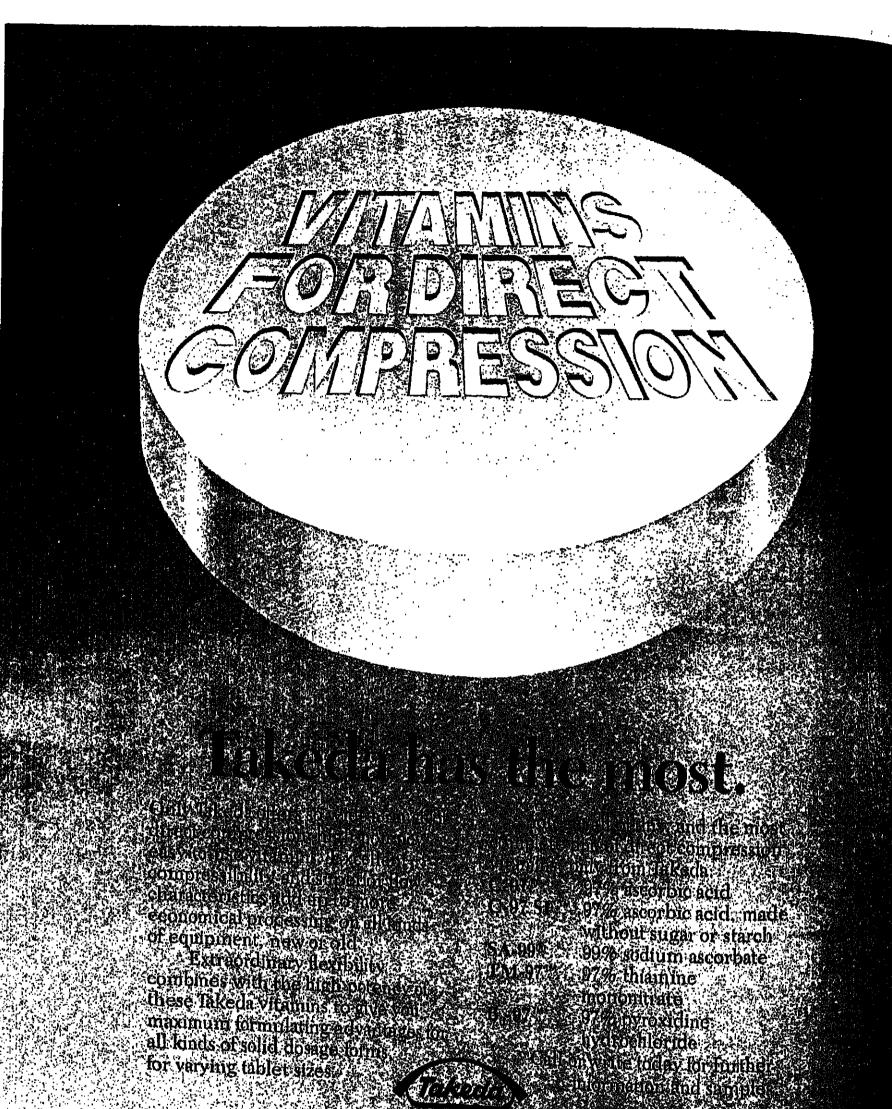
Of Vulcan Materials Company's three the same period a year ago, but that sales and earnings for the full year will fall below the 1985 totals.

Charles E. Sturgeon, president of the has set the pace through the first nine months, and will continue to do so pany's conversion of its chlor-alkali plant at through the current quarter and into 1987, officials told a luncheon meeting of the New York Society of Security Anamonth toward start-up at the first of the year.

Newly instituted price increases in caustic soda are partly holding, and a methylene chloride price increase has been fully accepted, with the possibility of another being posted early in 1987, Mr. Sturgeon said.

During the first even months, chlorinated solvent imports continued to rise at a 17 percent rate over 1985 volume, but exports in creased by 70 percent, he noted.

Lee K. Bailey, executive vice-president of construction materials, noted that all six of the company's construction divisions operate autonomously with their own presidents. Sales and earnings will continue to grow rapidly despite the failure to pass a highway construction funding bill and estimates that US housing construction in 1987 will fall to about 1.4 million to 1.5 million starts from Continued on Page 66.



compared to previous years, and current pricing is reflecting that expectation. The harvest is also very late at this point, further aggravating the short supply situation and helping to push prices up.
According to US Department of Agricul-

ture estimates, this year's peanut crop will be reduced by more than 18 percent compared to the 1985 crop. The projected size of this year's crop is 1.68 million tons, compared to last year's figure of 2.06 million

ons according to USDA.
"There'll be much less oil available this year," says an industry source, who anticipales steadier market conditions because of it. At the moment, little crushing stock is available, sources say, as only a little more than half of the crop has been harvested.

Thus far only a small proportion of oilgrade segregation three peanuts has shown up in the harvest, meaning that the oil industry will have to compete in the market with food-grade peanut buyers. It is cautioned, however, that not until all of the harvest has been completed can accurate assessments be made regarding the quality and grade of the

LATE HARVEST

Exacerbating the short supply of peanuts is the lateness of the harvest. "Normally we're finished at this time," says a source, "but as it is we only have a little more than half the crop in." Late planting, drought conditions during the Summer, and a rainy harvest season are the primary causes of the

In late September, oil consumers became confident that oil would be readily available when they wanted it. Their slack buying rought the price down to levels as low as 251/2 cents per pound. As the crop outlook worsened in recent weeks, the price has come

At this point buyers are not very active in rather than dealers. "Dealers have not been major players," says an industry source, who notes that buying is average, for "just normal

It is considered unlikely that prices will ease down any time this year. Some sources believe that some of the larger producers may try to ration their supply, releasing only a little at a time. "We won't see any big flood of oil at any one time." Says a source simply a while, but it is getting a tittle at a time, says an industry source. It is believed that customers who can wait until early next year will stay out of the market for the time being.

After the first of the year the corn grind is expected to increase bringing more oil to the of oil at any one time," says a source, simply ecause of the short supplies. In any case, dealers are expecting a stead-

FRIDAY SPOT PRICES

MARKET CLOSE OCT. 31, 1986

CRUDE VEGETABLE OILS

Corn oil, Mistront	.NA
Corn oil, Midwest b. b. Cottonseed oil, Velley b. lb. Linseed oil, Minneapolle	.201/2
Unseed on Allina Province Control of the Control of	.17
Palmoli, NY	.25 1814
Peanut off, Southeast (restricted)	3016
Scribesn cö, Decalurib.	.15
REED VEGETAL	

EFD, VEGETABLE OILS

Paanul oil, jumbo tanka, NY	lb2444 lb2885 lb28½ lb3935 lb1995
-----------------------------	---

FATS & GREASES

Lard, loose, bulk lanks 10%, fla tenks ib.	.10
Lard, loose, bulk tanks, divd., fia tanks ib. Tallow, inedible, fancy, banks, divd., Chicago ib.	.9 .15
Tallow, inecible, lancy, tanks, divd., Chicago ib. Tallow, inedible, bich., tanks, divd., NY ib.	.191
reliow, inedible, bich., tenke, divd., NYib.	12

OILS, FATS & WAXES

Peanut Oil Price Strengthens; Poor Availability Outlook Cited

Peanut oil producers are expecting ier market this year than in previous years. "Chances of seeing the price come down this year are slim," says another industry source, who believes that the price may come up more in the next week or two before the harvest is finished.

VEGETABLE OILS

CORN OIL — Availability of this oil is currently very tight, as reflected in the high price levels in the market. The tightness of

PRICES TRENDLINES

WEEK ENDING OCT. 31, 1986

CHANGES/UP

Corn oil, Midwest, 1c. perib. Cottonsed, 41% bulk, Memphis, \$10 per ton ottonseed oil, Valley, 1c. per lb. sim cil, NY, ½c. per lb. Peanut oil, Southeast (restricted), ½c. per lb. Soybean, 44% bulk, Decatur, \$2 per ton ybean oil, Decatur, Vzc. per ib.

CHANGES/DOWN

Coconut all, NY, 1c. per ib. Lard, loose, bulk tanks, Chicago divd., 2c. per lb.

OILS, FATS INDEX

The Oils. Fats & Waxes index reflects the prices of 11 representative materials in this sector and the quantity of each produced in 1985.

Oct. 31, 1986	81.94
Oct. 24, 1986	80.49
Oct. 3, 1986	79.85
Nov. 1, 1985	86.49

Chemical Prices Start on Page 48

supply is largely due to the heavy volume of the market, sources say. The trading that has export sales made several weeks ago, which been going on of late has been by consumers dealers will continue to be covering in November and December.

Demand has been slack as many consumers are unwilling to support the market at these levels. "Corn oil has been firming for a while, but it's getting a little bit extreme,"

expected to increase, bringing more oil to the market. Also, slow demand is predicted for much of December, which should serve to ease prices down, a source says. In the meantime, very tight supply conditions and strong pricing are expected to persist through the month of November.

SAFFLOWERSEED OIL - The price of this oil is currently quoted at 55c. per pound for crude material in tanks, New York. For edible material in drums, delivered, New York, the price is quoted at 75c. to 78c. per

The industry is still trying to evaluate the extent of the crop damage caused by wet weather in Montana earlier in the season. In addition to crop damage, there have been some quality problems as well, according to an industry source, who says that overly matured seeds have undesirably dark.

There is said to be a general reluctance on the part of sellers to offer very much material to the market. The reluctance comes as the result of uncertainty over just how severe the Montana crop damage has been. "We're in a wait and see mode," says a source, who notes that crop yields in California were gen-

SUNFLOWERSEED OIL - The price of this oil has come up to currently quoted lev els of 16c. to 16 %c, per pound for crude material, f.o.b. Minneapolis. With the increase in

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OILS, FATS & WAXES

pricing on most vegetable oils in the world market, foreign buyers have become more interested in US sun oil, according to an inlustry source.

Supplies of the oil are described as good. with new crop seeds slowly coming in. About half of the crop is in at this point. "Sun seeds have been moving out of the field, but we wish there was more movement," says an industry source, who notes that progress in the harvest has been lagging.

FATTY ACIDS

TALL OIL - Production of tall oil fatty acid (TOFA) was down in September compared to August's output, according to Fulp Chemicals Association figures.

Production of fatty acids of 2 percent and over rosin content in September was 15.9 million pounds, down 17.7 percent from August's output of 19.3 million pounds.

For material containing less than 2 percent rosin TOFA, production in September was 16.3 million pounds, off by 12.9 percent from August's level of 18.8 million pounds. FISH OIL

MENHADEN OIL - Following stronger pricing for palm oil, the price of crude menhaden oil has also come up. In tanks at the Atlantic Coast it is 12c. per pound, works, and at the Gulf it is priced at 13c. per pound, same basis. Producers are confident that prices will hold at these higher levels or move higher, particularly if palm oil production for October is off, as is expected.

US menhaden oil is selling well in Europe. particularly due to a lack of competition from other countries. The Japanese, who are continuing to have good fishing, are selling heavily on their own domestic market, according to an industry source. What exporting they are doing is said to be largely to Southeast Asia. This, in addition to the lack of offers from Chile, is making for good Us sales

Demand in the US has risen in the past couple of weeks, says a source, who cites interest in fish oil-derived omega 3 fatty ucld capsules, said to be effective in fighting holesterol, as a primary reason. Another source indicates that he has been meeting requests for menhaden oil from researchers studying omega 3 fatty acids. This rise in demand, plus the lightness of supplies, should help keep pricing at its current levels, Sources say.

MISCELLANEOUS

COCOA BUTTER — The spot price of co-coa butter has come down to \$2.14 per pound. The decline in price is attributed to weaker

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pricing on cocoa beans, and to a lact of pricing on cocoa beans, and to a lact of mand for the butter. With these facions tinuing to affect the market, the price, come down unother few cents is the future, according to an industry some

Over Five Years Reagan Mulls Waste Measure

Citing overwhelming public say for clean water, the Water Polic. Control Federation has urged Press Reagan to sign a \$20 billion Clean We reauthorization bill.

WPCF President Carl V. Huber mid letter to Reagan that "in a recent Long." public opinion survey, 86 percent de polled placed the need for adequate p pollution controls above economica cerns." Huber said the overwhelming gressional support for the bill is a died; sult of the deep-rooted public supported Clean Water Act and its goal of the swimmable" waters.

President Reagan has not said like sign the bill. Since Congress adjumits week, he may choose to kill the measure a "pocket veto." Whenever Congress journed, if the President chooses with a

oill within 10 days of receiving it, thebdis The WPCF letter says that the La achievements in bringing about regula reform and ending the federal waster? construction grants program should a weigh the administration's concern it. overall spending levels.

The bill has a total price tag of nearly billion dollars through 1994, much more: Reagan wanted. However, direct grant wastewater treatment would end afterly

Federal assistance after 1990 would. the form of matching grants to este state water pollution control revolvingic These funds would provide a self-support mechanism to finance future waster construction. The Huber letter notes & 1981, WPCF "was the first national 6 water organization to publicly call for orderly phase-out of the construction ga

Mr. Huber closed by telling President gan that approval of the nine-year rerizution would "be seen as one of your & istration's most lasting accomplishme environmental protection field "

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modity chemicals, expects to report record petrochemicals earnings for all of 1986, surpassing the previous high of 1981, stated F. Quinn Stepan, **Seen Profitable** chairman and president. Stepan's net earnings in the third quarter rose 26 percent to \$1,856,000 from \$1,478,000 a year ago, and sales increased to \$64,584,000

om \$61,713,000.

Polymer sales volume increased 40 per-

cent, due primarily to the company's new

phthalic anhydride-based polyols and

phthalic anhydride itself, Mr. Quinn com-

mented. Surfactant sales volumes also rose,

but total sales dollars were down due to lower

In Dallas, Tex., American Petrofina, In-

corporated, said it had third-quarter net

earnings of \$5,663,000, as compared with

\$10,757,000 last year. The latest figure in-

cludes pre-tax income of about \$25 million

raw material costs, he stated.

The petrochemical and polymer in-dustries will see little change in capacity in the US over the next five years and should experience a trend toward increased profits, Houston consultant John Doerr told the Society of Plastics adustries (SPI) Southwest Fall conference, October 25th in Austin, Tex.

Mr. Doerr, who is the chairman of Internation PC, predicts that fewer companies will be involved in the manufacture of petrohemicals and polymers. More integration, both upstream and downstream, will result in a decrease in open market sales.

Addressing ethylene specifically, Mr. Doerr says the capacity in place and operating today is insufficient to support major growth in any major ethylene consuming segment. and those companies depending on purchased ethylene must consider becoming more closely affiliated with ethylene supply.

Mr. Doerr's production forecasts through 1990 are more conservative than most: 1.5 percent for ethylene, 3 percent for total thylene, and 4 percent for polypropylene. Domestic markets for polymers will grow more rapidly than production, and supply will have to come from lowered exports.

Mr. Doerr points out that the profits from operation of steamcrackers have, since the mid to late '70's, been "nothing less than miserable." With fewer ethylene plants in operation and an increasing percentage that can use refinery feedstocks, more ethylene facilities are now owned and operated by oil com-

Add the fact that the captive market for ethylene is much larger than the merchant market, and you will likely see producers shying away from making ethylene for sale. They will favor operations that are captively owned or controlled where they can add value to their own ethylene.

According to Mr. Doerr, "The ball is in the court of petroleum refiners. They have the raw materials, they have the feedstocks, they have the basic capacity to supply polymers and other downstream chemical enterprises, and they desperately need to improve prof-

Union Carbide Hikes

Continued from Page 9

are progressing on schedule. The good operating earnings of Squibb, he adds, reflect the continuing strong performance of the com-

pany's pharmaceutical business.

Mr. Furlaud noted that the growth in this segment continued to be led by cardiovascular products. ar products, where sales increased 54 percent to \$178.2 million in the quarter.

Stepan Company, Northfield, Ill., a prolucer of surfactants and specialty and com-

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Department of Energy in August.

Kenneth W. Perry, president and CEO, said the company is "proud of our petrochemicals and plastics segment, which produced out-standing results for the quarter." Increased sales volumes and good margins allowed these plants to operate at capacity during the quarter, Mr. Perry stated.

"We have every reason to believe these results will continue throughout the fourth quarter and into 1987," he added.

Later last week, Imperial Chemical Industries PLC, of London, reported that its earnings for the third quarter were \$223 million, a lid advance from \$151 million a year ago. Sir John Harvey-Jones, ICI's board chairman, cited a progressive recovery of profit margins in most of ICI's businesses as a benefit of the oil price reductions, plus unusually strong demand in what is normally a slack resulting from a settlement agreement with

Drug Makers See

Continued from Page 5

use of products; recognizing that products should be cost-effective and that special measures may be necessary to accommodate the restricted ability of poorer countries to decide what to buy and to pay for it; and, finally, a determination by industry to impose on itself and to monitor high ethical standards of marketing behavior.

Founded in 1968, the IFPMA now comprises 51 pharmaceutical manufacturers' associations representing over 80 percent of the world's pharmaceutical production and an annual research investment of more than \$6 billion. The US Pharmaceutical Manufacturers Association is a founder-member of



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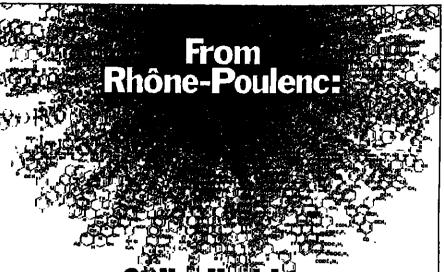
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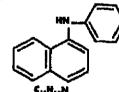
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AROMATIC ORGANICS

Cyclohexane Price Hike Driven By Housing Mart

tract price level for November 1 will at cas announced a price of 87c. per gallon, and least reflect 2c. per gallon of the upward benzene contract adjustment. This raises the price for Phillips Chemical Company and others by 1.65c. per gallon, up to \$1.0090 per gallon. Some producers may be as much as 1c. per gallon lower than this level.

Phillips led an October 1 removal of 1c. per gallon off the industry's temporary voluntary allowance (TVA) that was first granted last year. Producers say this move has been successful, and, as a result, 3 cents have been eliminated this year from the 4 cents per gallon than constituted the TVA initially.

Producers attribute their ability to raise pricing to strong demand and plant closures that have pushed up operating rates in the

industry.
Gulf Canada shut its 30-million-gallon-peryear facility last December, and it has been sald that 17 million gallons of US exports will end up having been created this year by that shutdown. There has been some talk in recent months that the plant might reopen under new management, but these rumors have quieted down recently, says a producer.

E.l. du Pont de Nemours & Co.'s 50-million-gallon-per-year Corpus Christi, Tex., plant has been shut since August, and is not expected to reopen until early next year. The company is working on routing hydrogen for the plant from a nearby facility in Victoria, Tex. Some producers remain skeptical about the feasibility of Du Pont's plans, and say the plant may not reopen at all.

SWING PLANT Philipps idled its 90-million-gallon-peryear swing plant in Sweeney, Tex., this May, but says it will likely restart the facility in

A producer says that, even though all the facilities that are in operation are running well, the market is fairly tight because of the plants that are down.

Cyclohexane production during the first half of the year was 1.112 million pound, as compared with .889 million pounds during the first half of 1985. Producers attribute part of the pickup this year to a drawdown of inventory levels in 1985.

Demand has picked up this year in the major end market of carpeting as a result of strong housing start levels and also a high level of housing resales, producers note. Although housing starts get most of the attention, comments one producer, the replacement carpeting market has been more important this year.

"The replacement market was stagnant last year," notes a producer, who lays part of the reason for the pickup this year to a wearing out of the carpeting from the last housing

BTX — Benzene producers are raising contract price levels by 2c. to 5c. per gallon November 1 from the October level of 85c.

According to an industry trader, Shell Chemical Company initially moved to 90c. per gallon, and was followed by Standard Oil

PRICE HIGHLIGHTS

Aniline	.14½14¼ .99¼98¼ .2022 .2123 .6773	SPOT (U8 \$) .2428 .8184 .14V214 N.A. .1920 .2021 .6567 .7577
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Cyclohexane producers say their con- Company. However, Exxon Chemical Ameri-Shell then reacted by moving to the same level. Standard Oil remained at 90c. per gal-

> Producers had been at the 85c. per gallon level for one-and-a-half to two months, one of the longest stable periods this year. Contract adjustments reflect strength in the benzene

PRICES TRENDLINES

WEEK ENDING OCT. 31, 1986

CHANGES/UP

CHANGES/DOWN

AROMATICS INDEX

The Aromatic Organics index reflects the prices of 14 representative materials in this sector and the quantity of each

produced in 1905.	
Oct. 31, 1986 Oct. 24, 1986 Oct. 3, 1986	187.84
Oct. 24, 1986	167.84
Oct. 3, 1986	167.84
Nov. 1, 1985	167.84

Chemical Prices Start on Page 48

spot market, which was quoted last week between 85c. and 87c. per gallon, up from the previous week's 83c. to 84c. per gallon level.

Industry players attribute much of benzene's firmness to strong derivatives demand, most notably styrene. "Derivatives are doing very well....(and) pulled benzene contracts up psychologically," says one

A trader observes that the upward trend has been running counter to crude oil pricing, which has been weak. "Oil looks a little shaky, on rumors that Saudi Arabia and Mexico have been discounting to pick up volumes," he comments. "Most product prices are off; aromatics are standing alone," observes another trader early last week.

However, later in the week, the removal of Sheik Yamani from his position as Saudi Arabian oil minister was seen as providing some

support for oil pricing.

The US futures market for hydrocarbons rose by the maximum permissable amount last Thursday following the Saudi announce ment. Although it is too early to tell the longterm effects of Yamani's departure on o values, and, hence, BTX pricing, a trader comments that "Yamani's policy had been to maintain market share by driving the price

The toluene market did not share beszene's strength last week. Spot pricing was quoted between 65c. and 67c. per gallon as compared with the previous week's price of

67c. per gallon.
"There is lackluster demand for toluene,"
observed one trader, and another attribute
toluene's failure to follow benzene to soft

gasoline pricing.
With the spread between benzene and toluene widening, Chevron Chemical Company said it was considering starting up its hydrodealkylation unit. However, a trader says that he does not believe Chevron "can see the sustained daylight" to justify a move.

The spot kylene market did firm up last

week to between 78c. and 80c. per gallon from the 78c. to 77c. per gallon level of the previous week. "There are no barrels

around," says an industry source.

AROMATIC SOLVENTS — Amoco Chemicals Company has announced prices for line of "Panasol" solvents that are affects

The price for "Panasol AN-2L" is \$1.45 gallon, the price for "Panasol AN-2L" is \$1.45 sl.10 per gallon, and the price for "Panasol AN-3N" is \$1.05 per gallon. All prices all AN-3N" is \$1.05 per gallon.

AROMATICS

tob Texas City, Tex., in tank cars and truck

transports.
NAPHTHENIC ACID — Producers of refined naphibenic acid say they are encour-aged by an evolving end use for the material incopper naphthenate as a fungicide in wood

Copper naphthenate's approval this year by a wood preservative association comes on the heels of government environmental action against pentachlorophenol, formerly the leader in this market, producers say.

Producers see strong growth in the wood restment area compensating somewhat for seak demand this year from the oil field sector. With drilling down due to inexpensive olimports, naphthentic acid's use as a corroion inhibitor has been off significantly, says

There is some concern among producers oser a potential decline in end market cobalt mphthenate's use in the radial tire industry. One producer says that, beginning next year, there are plans for some reformulation away m cobalt naphthenate by major tire com-

Other applications for naphthenic acld are sid to be more stable. These include paint and ink driers and lubricating oils. One proower points out that paint and ink drying micalions are not interchangeable with other materials, but that uses in emulsifiers, lubricants, and oils can be switched.

For crude naphthenic acid, pricing is quoted by one supplier in the mid-30-centsper-poundrange, and by another in a range of Mc per pound for 150 acid grade to 43c. per pound for 210 acid grade.

One producer, Hewchem, says it is raising iscrude pricing January 1 on 165 acid grade by 3c per pound, to 34c. per pound from 31c. per pound. 190 acid grade will move up 6c. per pound, to 38c. per pound from 32c. per pound At this date, no change is scheduled for 150 acid grade, which is posted at 30c. per pound A rival producer save his guarant pound A rival producer says his current pices are very close to the level Hewchem is

eving to January 1.

Refined naphthenic acid is quoted at 78c. er pound for 200 acid grade in bulk for the East Coast market. A West Coast producer godes a price of 65c. per pound for 200 acid gade. It is said that this material is primarly exported. Producers say that, in general, oricing has been fairly stable the past several

Producers of refined naphthenic acid say the market is tighter this year than last, and attribute much of this to Exxon's pulling out of the refined market in 1985 by shutting its South American facility.

One producer notes that "there was some jostling around and overbuying" when Exxon moved out of the refined business, and others say the market was "in a panic" briefly, but as been stable in recent months.

Crude suppliers say the market is rather tight on a worldwide basis, and one attributes this to a decline in the export activity of Romania. "There are some spot shortfalls and imbalances," he says.

Trade Secret Safety

Continued from Page 3

suits could only be brought under the Administrative Procedures Act).
In cases where a submitter has filed such a

lawsuit, the bill gives preference to the requester in the choice of which district court the case will be argued. If the requester has a competing commercial interest, however, the requester receives no special preference and the appropriate court is determined by standard legal procedures.

Finally, the new law requires that when courts review administrative decisions in cases brought by either requesters or submit-ters, the court will not be bound by the facts as found by the Federal agency involved (so-called "de novo" consideration), and provides that the submitter pay the legal costs of a requester if the court finds that the submitter's reasons for seeking to withhold the in-formation were not justified.

Calcium Lactate OK'd

Effective Nov. 26, Department of Agriculture will allow calcium lactate to be used as a flavor enhancer in some sausages and meat sticks. Calcium lactate is generally recognized as safe as a food additive by Food and Drug Administration, and is already approved by USDA for use as a binder in some meat products, according to Donald L. Houston, administrator of USDA's Food Safety and Inspection Service.

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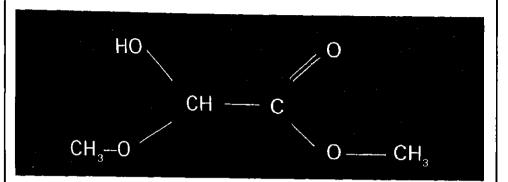
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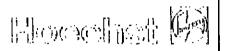


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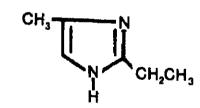
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Acid Rain Study Picked by DOE Meet Standards

Nine clean coal technology projects selected last Summer by the Department of Energy will accomplish many, if not all, of the objectives identified earlier this year by special US and Canadian envoys on acid rain.

That is the conclusion of an analysis sent to Congress by the Energy Department.

The analysis compares the environmental and economic benefits of the nine projects with the major recommendations for a clean coal demonstration program presented in January 1986 by Drew Lewis, special envoy to President Reagan, and William Davis, speclal envoy to Canadian Prime Minister Brian

Mulroney.

The department selected the projects in accordance with a Congressional directive to fund a broad slate of emerging coal technologies that would apply to a variety of commercial markets and use a wide cross-section of US coals.

By contrast, the Lewis-Davis report called for a program focusing on new technologies that could be added to existing utility power plants to economically control emissions from high-sulfur coal burning.

Nevertheless, the Energy Department concluded after a nine-month analysis that three of the nine selected demonstration projects conformed to all of the Lewis-Davis guidelines, while two more would meet the recommendations when deployed on a commercial scale. The remaining projects were found to meet at least half of the Lewis-Davis

The department placed major emphasis on the following four distinct facets of the Lewis-Davis guidelines in reaching its con-

- That the selected projects have the potential for the largest sulfur dioxide and nitrogen oxide emission reductions — both at the demonstration sites and in the future
- commercial applications.

 That funding be authorized for those

projects that reduce emissions at the ke

projects that reduce emissions at the killing cost per ton.

That more consideration be simply projects that demonstrate retrofit techniques designed to cut down on transformer. air pollution.

• That special emphasis be given to be nologies that apply to facilities curently pendent on the use of high-sulfur coal

In comparing the nine selected project these recommendations, the department of the department of the pressurized fluid and be concluded that the pressure and the concluded that the concluded that the pressure and the concluded the concluded the concluded that the concluded the combustion project proposed by America Electric Power Service Corp., the limsty injection multistage burner/sorbent his tion concepts to be demonstrated by Balon & Wilcox and the use of a natural garn burning" and sorbent injection technic proposed by Energy & Environmental search met all of the Lewis-Davisguide

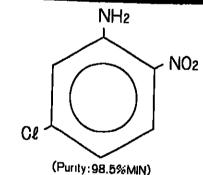
Two other projects — an advanced crib mbustor demonstration proposed by (a) Tech Corp. and a coal gasification into combined cycle plant proposed by the li Kellogy Company - met all the criterion the exception of reducing emissions to the demonstration phase. However, lie! partment concluded that commercial these concepts would produce fewer sions than the conventional technology would replace.

In general, the report found, the class projects applicable to new, "grass mu'a cilities could reduce sulfur dioxideensig by 15 to 96 percent and nitrogen oxide consions from 19 to 67 percent over currently eral New Source Performance Standards

Those technologies which could be retrolitted to existing facilities could retro sulfur dioxide emissions by 50 to morely 99 percent and nitrogen oxide emission 50 to 80 percent compared to an uncontrate high-sulfur coal-burning power plant.

In other comparisons, the Energy Dept ment concluded that eight of the nine lected technologies could be applied to :: ties — the only one not applicable in advanced ironmaking demonstration & oposed by Weirton Steel Corp. — and five could be used as retrofit technologies. existing plants. All nine showed the poleci for economic improvements over compa ble existing technologies, and all but a could use high sulfur coal.

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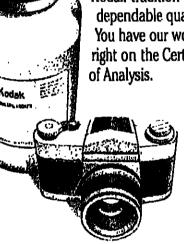
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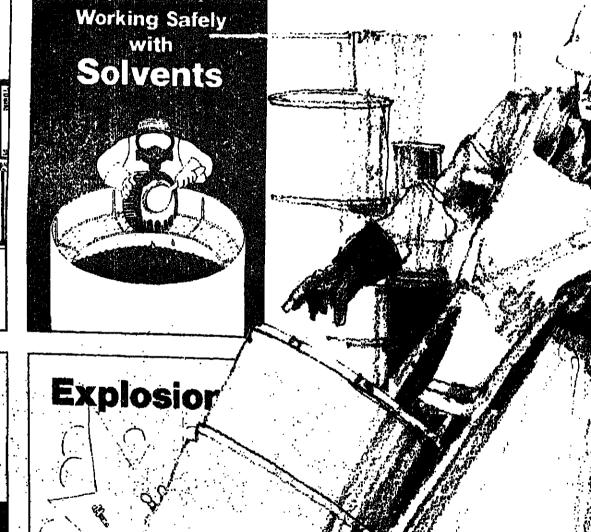
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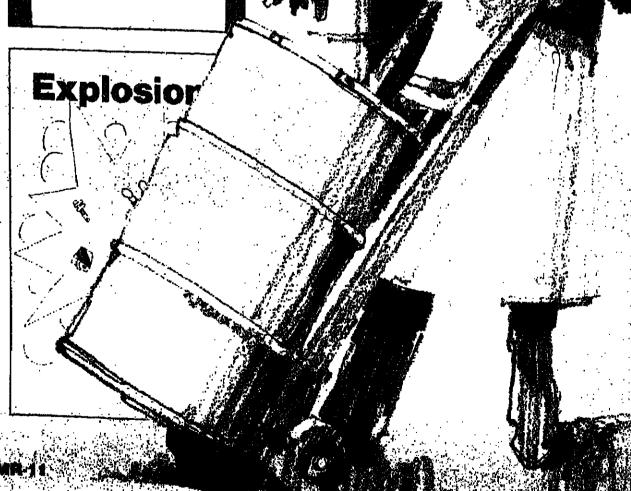
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ALIPHATIC ORGANICS

Propylene Price Hike Fails; Acrylonitrile Pressure Cited

small September rally that producers hoped to sustain into the fourth quarter. rices firmed a fraction in September, and oducers tried to follow this with a 2 cent per pound increase last month. After a promising beginning, many sources now say that prices for the month showed little or no

gamover september.

The hoped for October price increases were designed to reflect the firming price of crude oil and many petrochemicals. Since oil parily reversed its slide in August though, propylene prices had increased only one-half cent a pound or less. Producers hoped to recapture lost margins in October by posting 2 cent per pound price increases.

Early in the month, the price initiative

appeared promising. One producer says some early contracts were settled at 10 cents per pound for chemical grade, up one-half cent from September's contract price. However, toward the latter part of the month, the firming trend lost its momentum and contracts slipped back to 9 1/2 cents by month's end Spot prices, though, were able to firm a fraction in October, moving from 9 cents to 911 cents per pound in the month for chemi-

OVERSUPPLY CITED

Sources attribute the falled price initiative to several factors. One is simple oversupply. Even though demand for propylene has increased in nearly every major end use this year, supply has been ample all year. Falling rude values made it very attractive to crack heavy feedstocks at ethylene plants and so ropylene production from steam crackers as been high in 1986.

Also, the push to improve octane ratings has pushed oil refiners to run their catalytic crackers at high severity, thus increasing the upply of refinery grade propylene. Conseilly, while demand is up considerably in 986, there has been a supply overhang for he C3 material nearly all year.

Another major reason cited for low prices has been tremendous downward price pressure exerted by acrylonitrile producers. Faced with extreme competition in the export market. US acrylo producers have satched their export prices fall from over \$700 to \$500 per metric ton in the past ten months. Given this long, sharp slide in prices, acyrlo makers have resisted higher raw maierial propylene costs. Since, as one observer notes, over 100 million pounds of propylene per month is consumed in making acrylonitrile for the export market, the acrylo producers have been able to exert strong pres-Sure to keep chemical grade propylene prices

Aside from acrylonitrile though, this has been something of a banner year for propylene consumption. Producers point out that demand for polypropylene has been out-slanding, and that consumption of propylene oxide, cumene, isopropanol, and oxo-alcohols have all exceeded expectations.

The growing market for exports has also given a big boost to propylene makers, both by sopping up extra domestic supplies, and adding a little firmness to the pricing struc-

PRICE HIGHLIGHTS

ALIPHATICS IN OCTOBER

	OCT.	SEPT.
Bujediene	(US \$)	(US 8)
Buladienelb.	-101/2	.111/2
Ethylene	.141/2	.14
Ethylene Glycol	.161/2	.161/2
Methanol gal.	.2728	29
Propylene	.91/2	.93/4
Varyi Chilorideib.	.151/2-,16	159

Propylene prices failed to register ture. Along with a growing structural tightenler real gains in October, cutting short a coning in propylene supplies, European supplies grew very tight beginning in late August due to maintenance turnarounds at several European ethylene crackers. As a result US export demand has soared. Several sources estimate that orders for over 60 million pounds of US propylene were placed by Euoopean consumers in the past two months. A ire in the Houston Ship Channel in mid-October has held up over 20 million pounds of

PRICES TRENDLINES

WEEK ENDING OCT. 31, 1986

CHANGES/UP

CHANGES/DOWN

ALIPHATICS INDEX

The Aliphatic Organics Index reflects the prices of 20 representative materials in this sector and the quantity of each

produced in 1800.	
Oct. 31, 1986	222,80
Oct. 24, 1986	222.80
Oct. 3, 1986	222.80
Nov. 1. 1985	

Chemical Prices Start on Page 48

exports until early November, but the size of this export demand has given the US propylene business a lift.

Polymer grade propylene moving to Europe is fetching a higher price than that sold the domestic market. While the US contract price for polymer grade propylene stands at 101/2 cents per pound or less, Hugh Pylant of Pace Consultants, Houston, says producers are now asking 11 cents per pound r export sales.

Jack Doerr of International PC, Inc., Hous-ton, notes that tightening supplies of propylene in Europe has driven the price there up from 480 Deutschmarks per metric ton for third quarter contracts to a current spot price of 570 Deutschmarks per metric ton. To US suppliers, this is an increase from 11 cents per pound delivered to port to 13 cents per

Several turnarounds at US cat crackers have tightened the domestic refinery propyl-ene pool, but analysts contend that total domestic propylene supplies will remain high through the end of the year. Hugh Pylant projects that the feedstock slate in olefin units will assure high propylene output. Ethane, he says, should remain unchanged with about 40 percent of the feedstock total. Propane, however, is in extremely long supply and is expected to increase its share from 19 percent in September to 25 percent in December. At the same time, gas oil will decline in use as the approach of Winter drives up heating oil #2 prices. Mr. Pylant projects that gas oil will fall from 23 percent f total reedstocks to 16 percent by the end of the year. Naptha will increase slightly from

While chemical and polymer grade propylene prices stagnate, the cutback in production at refineries have driven up the spot price of refinery propylene. Since early September, refinery grade propylene prices have risen from 7 cents per pound to the current 8 cents to 8 ½ cents per pound range. However, by closing the differential between refinery material and chemical grade propylene, many refiners have realized greater value by putting the propylene in the dimersol and alkylation pools.

ACETATE FIBERS - Celanese Textile Fibers says it will boost prices for all compacted acetate filiment yarns by 5c. per Continued on Page 21

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Chemical Finance

Epolin's Shares Go on OTC Market

Shares of Epolin Incorporated, located at 293 Wilson Avenue, Newark, N. J., are by Shares of Epolin Incorporated, located at 293 Wilson Avenue, Newark, N. J., are by available to the public on the over-the-counter market. Epolin (acronym for "Expandy Polymers for Industry") is planning commercial production of products based on polymerization of a novel class of monomeric materials, including spiro-orthocarbonales of monomeric materials. The patent is owned by Prof. William I Page. do most monomers the company says. The patent is owned by Prof. William J. Balley, of the University of Maryland, and is exclusively assigned to Epolin.

de Zoete & Bevan Says ICI is Undervalued

Selling at a discount of 19 percent to the market averages, the shares of Imperior Chemical Industries PLC are undervalued and investors should avail themselves of the opportunity to purchase them at current price levels. according to de Zoete & Bevas, of Containing to purchase them at current price levers. according to the zoete & Beval of London, New York, Hong Kong and Tokyo. Analysts Howard Coates, Jinty Price and Robin Hindie Fisher note that ICI is feeling the benefits of lower feedstock price favorable currency movements and strong end-use demand. ICI's share price should about 11 times earnings instead of 9 times earnings as at present, the analysts stated

Goodrich Issuing \$100 Million of Preferred

Directors of B. F. Goodrich Company, Akron, Ohio, have authorized the issuance \$100 million of convertible preferred stock. Goodrich expects to file a registrate statement shortly with Securities & Exchange Commission for the issue, which with offered only by means of a prospectus. The dividend rate and the convertible features be determined later. Proceeds will be used to reduce debt and for other general copies purposes, Goodrich stated.

Goodyear Restructures Under Threat of Acquisiton

Goodyear Tire & Rubber Company has retained the investment banking firms of Drexel Burnham Lambert, Inc., and Goldman Sachs & Co. to assist it in devising a restructuring plan that would maximize shareholder values. The move comes and speculation that Sir James Goldsmith, an Anglo-French (Inancier and corporate aller, will attempt to take over the company. According to published reports, Sir James over somewhat more than 15 percent of Goodyear's outstanding common shares.

Syntex Extends Stock Repurchase Program

Directors of Syntex Corporation, a diversified health care company based in PaloAllo Calif., have authorized an extension of the company's recent common stock repurchas program, which began in late June 1986. Directors authorized the purchase in the opmarket or through privately negotiated transactions of up to 2 million additional share over an indefinite period of time. This extends a 4-million-share repurchase program which was begun June 20 and completed in mid-October. Acquired shares will be held:

Squibb to Repurchase 1 Million Shares of Stock Directors of Squibb Corporation have authorized the repurchase from time letimed

up to 1 million shares of the company's outstanding common stock. The shares will be held in the treasury and will be used for the company's stock option plans and ਿਰ ਹੀਤ general corporate purposes.

Squibb's directors have also adopted a merger defense amendment, commonly called "poison pill," consisting of stockholder rights that would be exercisable only not conditions indicative of a hostile takeover attempt.

Borden's Chemical Income Surges 68 Percent

Borden, Inc.'s worldwide chemical division recorded a 68 percent increase in operation income in the third quarter, with domestic operations gaining 84 percent and intertional operations 28 percent, reports Eugene J. Sullivan, chairman and chief exculivanted by the control of the officer. All four domestic groups had higher earnings, with the biggest gain posted by the group that markets polyvinyl chloride resins. Mr. Sullivan stated. A percentage gain d 2,600 percent in PVC resin income translated into a very substantial dollar gain, the CD further commended.

Du Pont Increases Dividend by 5 Cents

Directors of E. I. du Pont de Nemours & Co. have increased the quarterly divided the common stock by 5 cents per share to 80 cents, payable December 13 to stockholds of record, November 14. The boost reflects the company's improved earnings, constantly strong control of the boost reflects the company's improved earnings. tently strong cash flow and "commitment to improve shareholder return," slaid Richard E. Heckert, Du Pont's board chairman. Also declared were regular quarief dividends on preferred issues.

Chemical Waste Management Completes Offering

Chemical Waste Management, Inc., Oak Brook, Ill., has completed an offering of 18 million shares of common in an initial global public offering. Net proceeds of appropriately \$309 million will be used to pay a cash dividend to Waste Management Incorporated and repay certain indebtedness to Waste Management, which retains appropriately 81 percent of the company's 99.9 million shares of common stock outslands after the offering.

Solvay Boosts its Holding in Laporte

Solvay & Cie., of Belgium, has acquired an additional 1,172,793 or Laporte Industries PLC, the diversified titanium dioxide producer headquartered in England, thereby raising its total holding to 22 percent of Laporte's ordinary shift capital (common stock). Solvay has stated its intention to raise the interest gradually 25 percent. The two companies are joint holders of Interox, a worldwide produce of hydrogen peroxide.

Hutton Still Neutral on IMC's Stock

E. F. Hutton & Co. maintains a neutral rating near and long-term on the stock of International Minerals & Chemical Corporation, Skokie, Ili. John P. Henry, Hutler Chemical analyst, believes the agricultural environment will continue to depress the firm's earnings. Mr. Henry notes that operating earnings in fertilizers were down to firm's earnings of the first fiscal quarter ended September 30, which included a special galaxy million, as compared with earnings of \$24 million in the same period a year ago.

ALIPHATICS

Continued from Page 19

pound, and hike weaving twisted yarns prices by 7c. per pound. The increases take effect

DIMETHYL SULFOXIDE — Atochem, inc says it has increased its dimethyl sulfoxide prices effective November 1, 1986. Atochem says the increases are the first in two years and attributes them to higher raw material freight costs.

The new schedule for DMSO in drums are: Mc. per pound for drum container quantities (32,410 pounds); 96c. for truckloads sizes (minimum 24,076 pounds); 97c. for quantities ranging from 9,260 pounds to 23,613 pounds; \$1.00 per pound for orders varying from 2315to 8,797 pounds, and \$1.05 per pound for orders ranging between 463 pounds and 1,852

ETHYLENE GLYCOL - Producers say an October 2c. per pound price initiative has been successful for industrial grade material, but not so for anti-freeze grade. Fiber grade product was not included in the price

Dow Chemical reportedly led the initiative (CMR, 9/15/86, pg. 56) on both products, but then backed off on anti-freeze grade. Producers say the increase was also set back for most accounts to October 15, the effective dale later announced by Union Carbide, the largest glycol producer.

The anti-freeze increase is said to have failed because glycol producers with consumer product lines are not increasing retail anti-freeze prices. Most buying of anti-freeze product took place before October anyway,

There is some isolated resistance to the industrial grade increase, one observer says as PPC reportedly is waiting until November to increase prices to its accounts. Industrial accounts make up about 10 percent of the EG

Producers are now looking at industrial grade prices in the 18c.-to 19c.-per-pound range f.o.b. Gulf production point. Antifreeze grade remains at 16c. to 16 1/2c. per

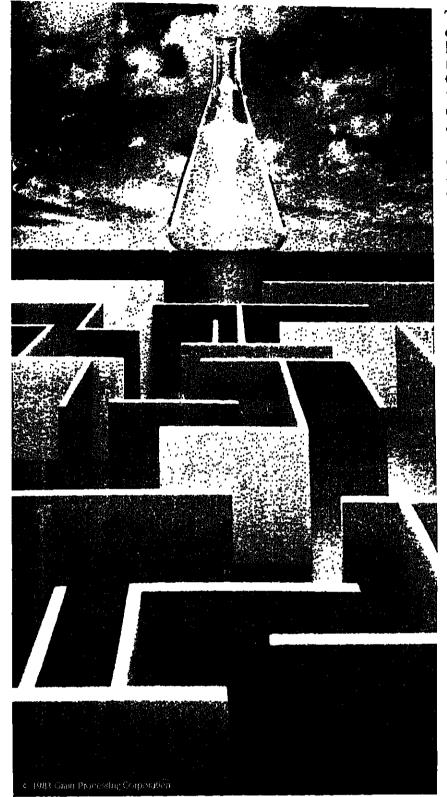
Producers are also reporting that ethylene oxide buyers are also accepting at least most of the 2c.-per-pound increase that was also asked for in October. Not all accounts have been settled here, however.

PERCHLOROETHYLENE - Dow Chemical USA has announced a 2c. per pound increase in its line of perchloroethylene prodwis, effective December 1 The increase, which is not to exceed cur-

rent list prices, affects "Dowper," "Dowper CS," perchloroethylene industrial and SVG and tetrachloroethylene USP grades.

A perc importer, who says he intends to support the price initiative, puls the current market price for industrial grade perchloroethylene between 16c. and 17c. per pound Lo.b. tanks.

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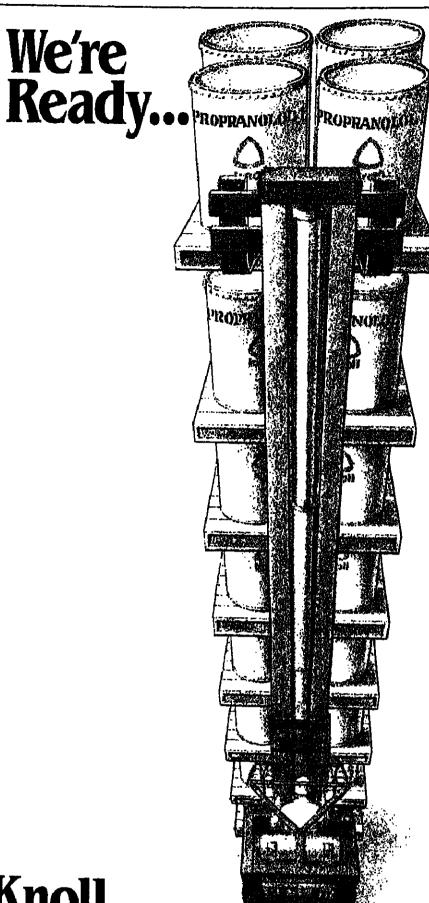
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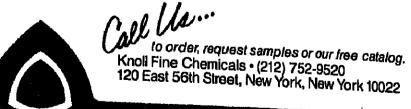
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DRUGS & FINE CHEMICALS

Vitamin Price Hikes Posted By Roche and Takeda USA

Hoffmann-La Roche Inc., one of the US's leading suppliers of vitamins, recently announced several price increases, all effective November 1. In addition, late last week Takeda USA also announced multiple price hikes. The increases involve an array of vitamins, including many B-vitamins, vitamin C and vitamin H.

Most vitamins have been firming throughout 1986, a sharp reversal from the previous three years, which were characterized by market depression. Roche's move, however. marked the greatest number of simultaneous price increases

Some observers believe Roche's numerous increases symbolize the industrys' desire to match 1982 price levels. Prices are sald to be rallying this year because of currency devaluation and increased demand.

The B-vitamin increases are: thiamine mononitrate USP, FCC and thiamine hydrochloride USP, FCC (both vitamin B_i), \$33 per kilogram for 100 kilograms, \$34.50 per kilogram for 50 kilograms, and \$35.50 per kilogram for 20 kilograms. Fifty and 100kilogram quantities for thiamine hydrochloride are in bulk containers. Riboflavin USP, FCC (vitamin B₁), is moving to \$48.50 per kilogram for 100 kilograms and \$50 per kilogram for 25 kilograms; 95 percent granulation of riboflavin USP will be \$50 per kilogram for 100 kilograms and \$51.50 per kilogram for 25 kilograms.

NEW SCHEDULES

Other B-vitamin increases are: niacln USP, FCC (nicotinic acid), \$6.50 per kilogram for 5,000 kilograms, \$6.75 per kilogram for 1,000 kilograms, \$7 per kilogram for 250 tion, \$10.85 per kilogram for 1,000 L kilograms, and \$7.25 per kilogram for 50 kilograms; niacinamide USP and niacinamide free flowing granular, \$6.50 per kilo-gram for 1,000 kilograms, \$6.75 per kilogram for 400 kilograms and \$7 per kilogram for 50 kilograms; d-calcium pantothenate USP, FCC (vitamin B₅) \$12.50 per kilogram for 500 kilograms, \$13 per kilogram for 100 kilograms and \$13.50 per kilogram for 25 kilograms; pyridoxine hydrochloride USP, FCC (vitamin B₆), \$36 per kilogram in bulk containers, \$38 per kilogram for 20 kilo-

BASF Wyandotte and EM Industries reportedly initiated many of these increases.

Other increases announced by Roche are: ascorbic acid (vitamin C) and sodium ascorbate, \$11 per kilogram for 400 kilograms, \$11.25 per kilogram for 100 kilograms and

cium ascorbate, FCC, \$14 per klogram 500 kilograms, \$14.50 per kilogram for his kilograms and \$15 per kilogram for his grams; coated ascorbic acid 97.5 pag \$11.45 per kilogram for 400 kilogram \$11.75 per kilogram for 100 kilogramsiz \$12 per kilogram for 50 kilograms Niacinamide ascorbate, FCC, \$105g

PRICES TRENDLINES WEEK ENDING OCT. 31, 1986

CHANGES/UP

CHANGES/DOWN

DRUGS INDEX

The Drugs & Fine Chemicals intexte flects the prices of 10 representative materials in this sector and the quarty of each produced in 1985.

Oct. 31, 1986 Oct. 24, 1986	***************************************
Oct. 3, 1986	
Nov. 1, 1985 .	

Chemical Prices Start on Page 48

kilogram for 400 kilograms and \$10%; kilogram for 50 kilograms; ascorbic acil ercent granulation, \$10.30 per kilogam! 1,000 kilograms, \$10.50 per kilogramia: kilograms and \$10.75 per kilogram ia) kilogrums; ascorbic acid 95 percent gragrams, \$11.05 per kilogram for 500 L grams and \$11.30 per kilogram for kilograms; sodium ascorbate, meat ga \$4.90 per pound for 200 pounds and more \$5 per pound for less than 200 pounds lie prices are for product in bulk contained

Roche is also raising its price for life FCC (vitamin II) to \$5 per gram for grams, \$6 per gram for between 100 and grams, and \$8 per grams for less that grams; I percent biotin trituration nows \$55 per kilogram for 100 kilograms p \$56,50 per kilogram for 50 kilograms

A Roche spokesman says the compan cided to examine its portfolio of vitamic order to establish stable list pricing mit turn, restore stability in the marketple He, along with other vitamin supplier, st that pricing is still lower than it was his

DRUG & FINE CHEMICAL IMPORTS: AUGUST

CENSUS BUREAU REPORTS ON THE TOP DRUGS

	AUG			JULY
Aceteminoshos	QUANTITY	S VALUE	QUANTITY	S VALUE
Acsteminophen	428,431	1,000,445	362,774	1,422,75
	106,073	1,595,983	214,854	4110
Brucine			75,000	ال عمر .
Caffeine	573,710	2,250,482	384,947	
	3,878,940	2,442,417	5,059,952	34E
Cream of Tartar	289,531	169,386	162,811	1,585,5
lodine crude	196,070	748,782	462,085	629,13
lodine, crude	205.238	1,159,882	143,455	3,072,41
Nacin pharmacoulters	6,454,483	3,586,412	6,722,198	321,19
Niacin, pharmaceutical grade	132,276	308.283	143,99	1,5(7,61
Penicillin n.e.n.	195.086	1,333,596	125,209	1,225,113
Penicijin n.s.p.f. ibs. Phenylephrine HCi bs.	10,899	735.026	· 0,752	
Phenylephrine HCI	2,205	137,069		35.28
Quinidine	95,190	38,609	40,000	62E PA
Quinidine	589,988	1,972,865	177,018	103,19
Saccherin. 02,	249,974	674,558	71,420	160 631
Saccherin	176,764	348,172	80,274	1,773,916
Sulfamethazine	1,222,528	1.087,271	2,589,985	651.0
Sulfathiazote	111,553	489,885	130,292	\$15,875
Tertaric acid	83,730	177,687	141,315	(2) (2)
Vitamin A	641,559	656,863	547,070	2,00
Yitamin B.	249,989	1,667,557	421,898	MATE.
Yikamin 9.	76,423	876, 153	83,690	1,865
Vitemin R.	188,958	2,662,319	116,300 85,332	· # 5
Vitamin C	4,854	219,090	1,424,313	~ 1
YIUMIN C	1,157.473	4,226,391	456,795	2.50
Vitamine providence.	220,891	1,250,288	133,330	
Woolgrease, n.s.p.f	11 074	103,113	F26.255	Carlotte Control
29.	737 485	335,203	0401	

DRUGS & FINE CHEMS

Roche's price increases range from 5 to 10

percent.
Takeda USA also announced increases on Takeda USA also announced increases on several vitamins, all effective November 1. Thismine mononitrate and thiamine hydrochloride are increasing to \$33 per kilo from \$1 per kilo; riboflavin USP is increasing to \$48.50 per kilo from \$46 per kilo; pyribola budrochloride (vitamin B.) is increasing to \$48.50 per kilo; pyribola budrochloride (vitamin B.) is increasing the second control of the sec doxine hydrochloride (vitamin B₆) is increasdoxine hydrocritotic from \$33 per kilo; pure ing to \$36 per kilo from \$35 per gram, and blotin will now be priced at \$5 per gram, and hidin I percent will now be priced at \$55 per

Takeda is also increasing ascorbate prices: ascorbic acid and sodium ascorbate are moving to \$11 per kilo from \$10 per kilo and direct compression grades of these two are also being increased on an equivalent basis. Also, calcium ascorbate is going to \$14 per

Takeda cites the need to return to profitability and changes in currency values as being behind the increase. The company also notes that supplies of many vitamins are somewhat tight because reduced profits are forcing the industry to work with lower in-

Because of the currency situation, brokers are now working the other side of the fence. Suppliers explain that instead of buying material in Europe and selling it in the US, brokers are now buying in the US and selling in Europe because European pricing is now higher. Therefore, US suppliers of vitamins are benefiting from brokers, rather than beundercut by them.

Currency aside, one spokesman claims that "demand is a close second reason" for rising prices. The US is the world's largest market for USP vitamins.

Players expect vitamin prices to remain stable for the rest of 1986, but some hint firming could start again in second quarter

GENERICS - Generics continue to increase their share of the pharmaceutical market, said David Saks, drug analyst for Morgan, Olmstead, Kennedy & Gardner at a recent conference in New York. Mr. Saks claims that generics are heading toward a 50 $_{
m D}$ ties.

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Rauwolfia Serpentina USP Reserpine, Pure Alkaloid USP

Doxepin Hydrochloride USP

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Digoxin USP

Fructose USP

percent market share, opposed to the current

He says that there are more than 100 recently off-patent prescription drugs with sales of more than \$6 billion. He also notes that most of the top 100 prescription drugs will come off patent within the next four years, with 1987 and 1989 the two biggest years. These phenomena, combined with the economic and political pressures in the market place, should cause rapid generic drug growth in the 1980's and into the 1990's.

Based on the categories of "past growth," "future growth," "profitability," and "research and development," Mr. Saks rates LyphoMed as the top generic firm, followed by Mylon and Zenith. LyphoMed and Zenith are also considered the two most improved

Mr. Saks concludes that there are less business risks today than in previous years. This s because most generic firms have many products, rather than just one. He adds, hough, that many doctors prefer "old" products to "new" ones, because of their familiarity. Also, familiar products are much less ikely to surprise patients with their side ef-

Chemed, Merck **Agree on Sale**

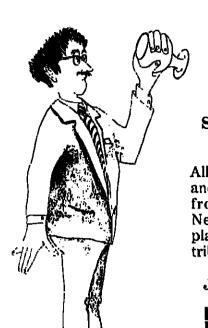
Cherned Corporation and Merck & Co., Inc. last week announced they have entered an agreed in principle for Merck to purchase substantially all of the business and assets of Chemed's wholly owned subsidiary, Vestal Laboratories,

Chemed expects to receive cash payments totalling approximately \$67.4 million from Merck over the next four years, the substantial portion of which would be paid at closing.

Vestal Laboratories, headquartered in S Louis, Missouri, manufactures and markets professional skin care products, disinfectant cleaning products and instrument germicides to hospitals, nursing homes and general health care and other institutions and facili-

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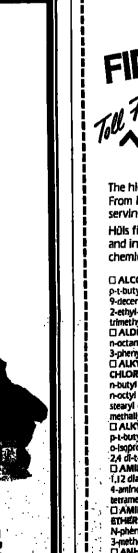
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Toxic Waste continued from Page 3

the primary means of disposing of hazardous waste in the future, as the agency phases out land disposal of many toxic wastes over the

Waste minimzation can be accomplished through changes in manufacturing or operating processes (called source reduction) and through recycling of product or waste com-ponents. The agency found that initial source reduction can be accomplished through bet-ter internal management of production processes and company operations.

"We discovered that by far the most significant first step a company can take to reduce its hazardous waste production is implementing a number of 'good housekeeping' practices, such as preventing spills, leaks and the unnecessary mixing of hazardous with non-hazardous components," said Mr. Porter. "Many of these simple steps can achieve a significant reduction in waste pro-

"However, as waste disposal costs in-crease, companies are beginning to imple-ment more complex technological changes in manufacturing processes. We want to encourage this effort across industry segments through the development of our Federal information transfer and technical assistance

program," Mr. Porter noted. Good housekeeping practices also could include reviewing internal management procedures to identify initial steps which could be taken to reduce the amount and toxicity of wastes, such as source reduction and recycling potential; segregating hazardous from non-hazardous waste streams; improving inventory control, such as separating hazardous from non-hazardous substances; and training employees in better handling and control of hazardous substances and waste.

EPA said technology modification appears to be the most promising source reduction technique of the future for highly-automated, large-volume production lines. In a chemical process, catalyst selection and process design continue to have the most direct affect on waste volume.

Hazardous waste recycled in the greatest olume are waste streams with constituents that can be reused in large-scale operations. This was the method of recycling used by the hree manufacturing industries which accounted for 89 percent of the total volume of hazardous waste recycled in 1981: the transportation equipment industry, which recycled wastewater treatment sludges from electroplating and from chromium plating solutions; the chemical and allied products

industry, which recycled spent acids and a kaline solutions; and the primary metals industry, which recycled pickle liquor, a corre sive, metal-bearing waste.

Cost savings for waste reduction methods have been significant: for example, a facility in the chemicals and allied products industry has reprocessed spent acetone at a cost say ings of \$72,000 a year. A facility in the electrical appliance industry substituted a water-soluble cleaner for the solvent trichloroethane (TCE) and recycled used TCE to achieve a 30-percent reduction in waste at a cost savings of \$35,000 a year. Another facility in the paper and alles product industry recovered vaporized sol vent for a yearly cost savings of \$1.8 millions

In another case study, a facility in the metal finishing industry achieved a 90 per cent reduction in waste by recycling nicke plating solution and a 50-percent reduction cyanide and copper wastes by substituting chemical cleaner.

The data also indicate that of the 266 ml lion metric tons of hazardous waste gener ated annually, the chemical industry produces 180 million, or 68 percent.

EPA's soon-to-be-developed computerized data base on waste minimization activities will be available to states and the general public. As part of its technical assistance program, the agency will develop technical information and will provide interested companies with names of state and Federal government experts in specific waste reduction

Textile Deficit Hits \$15.9 Billion

Imports of textiles and apparel forth first three quarters of the year hitam: record level, the American Textile Mar ufacturers Institute reported Thursday

In figures released by the Department Commerce, textile and apparel impre reached 9.8 billion square yards for January - September, a 20.5 percent increase overthe same period last year. Imports of tents cent from September 1985.

The textile and apparel trade deficition the first three quarter of the year reach! \$15.9 billion, an increase of 17 percent of last year's record level. The textile and ? parel trade deficit is 12 percent of the # tion's total merchandise trade deficit

ATMI President Dewey L. Trogdon si There is no question that textile and appare imports are a major national problem that not going to go away. The 20.5 percei growth for the first 9 months of the jest alone represents almost 200,000 job opporto nities lost for U.S. workers.

"September's slight decline in imports not unexpected because some countries have filled their quotes very rapidly this year of

rupting our market. "The 9.8 billion square yards of textiless pparel imports that entered the U.S. duly the first three quarters of this year are near as high as the total textile and appareliment level for all of 1984," he said.
"Since 1980, the industry has seen of the control of another in

record year of imports on top of another in trend continues and the overall trade figure make it clear that the American fiber, to tile, and apparel industry must have a la islative solution to this problem," Mr. 199

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Paint Spray Costs Seen Skyrocketing With High-Solids

less deposition in the system. Thus, maintenance cost are lower.

"In both cases, long-term sludge disposal

costs essentially remain the asme. If the

sludge is not removed from the system on a

daily basis, it will have to be removed during

Sarno cites an example of looking to the

bottom line for a return on investment in

which the overall spray booth chemical

treatment costs of one automotive manufac-

turer were \$350,000 per year. The treatmen

relatively unchanged."

As manufacturers with paint spray live paint deposits in the system which inbooth operations convert to high solids creases maintenance costs. A highly-effecpaint, their booth treatment costs are tive program results in completely killed paint, well-controlled sludge handling and skyrocketing. It used to be that chemical treatment could cost as little as a few pennies per job. Now manufacturers are faced with treatment costs typically ranging from \$0.75 to \$1.50/gallon of overspray paint—\$1 per job or higher.
These higher costs reflect the many probone of the large scale periodic cleanouts. The annual sludge volume and disposal costs are

lems associated with the use of base/clear coat or other high solids paints: increased deposition, more frequent booth balance and stack emissions problems, and more difficult and costly sludge handling, according to Carnen Sarno, assistant vice-president and director of engineering for the automobile industry at Betz Laboratories, Inc.

"Focusing on cost savings in one area can bemisleading," warns Mr. Sarno, "because it may be costing you more in other areas. Inslead, look to your bottom line when compar ing different programs. A high return on your investment should always be expected."

Of all the tangible treatment costs, operating expenses—such as temperature control, lighting, fans, etc.—are the only relatively fixed costs.

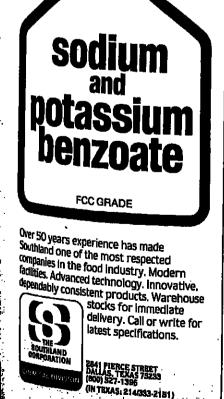
"Chemical costs are variable and depend on a number of factors like paint type," says Mr. Sarno. "Our costs average from under \$1 to \$1.50 per gallon of overspray base/clear or high solids enamels. This figure includes detackifiers, antifoams and sludge condi-

Maintenance costs vary depending on the treatment program and typically include daily cleaning of booth grates and walls, spray guns, paint lines and robotics, as well as periodic cleaning of the sumps, stack/fan,

The most common method of sludge disposal is landfilling. Mr. Sarno estimates that non-hazardous sludge disposal costs range from \$25 to \$75 per cubic yard and hazardous sludge from \$50 to \$150 per cubic yard. Solid-lifesion costs of liquid waste can add 20 percent to 60 percent to the disposal: "Naturally these costs of the costs of the costs." rally, these costs are site-dependent and some variation is expected since all states have different regulations.

"Many people feel that sludge disposal is one area where money can easily be saved," says Mr. Sarno. "However, a chemical pro-gramaimed at reducing daily sludge disposal costs may do so at the expense of increasing ong-term maintenance costs.

"Choosing the wrong treatment program results in poor efficacy. This means more





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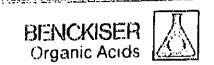
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nual savings of about \$250,000; cut nightly outside contractor cleaning by half—an annual savings of about \$100,000; and reduced dumping and pit cleaning frequency from 3 weeks to 20 weeks—an annual savings of investment." \$500,000. In addition, the treatment program was \$150,000 less per annum than the previous program. However, annual sludge disposal costs were unchanged, despite the change in chemical treatment program.

In this case, reduced maintenance alone saved the manufacturer about \$1 million. This resulted in a 3 to 1 return on chemical treatment costs.

"Added to that were other related savings that further increaed the ROI," Mr. Sarno says, "including freight and drum handling reductions, energy savings in water reuse

Mr. Sarno mentions other factors that should be considered in the ROI formula. Included are improved system reliability and less downtime, improved working environment, optimized scrubber efficiency which results in reduced stack emissions and balance problems, extended equipment life and consistent product quality.

"The best chemical treatment programs, in the final analysis, will usually cost nothing," says Mr. Sarno. "They should pay for themselves by the savings realized in other areas. Overall savings will not result by con-

program reduced weekend booth maintenance manpower from 33 to 8 men—an annance manpower from 33 to 8 men—an annance or chemical costs. Because of the interdependency, proper attention to the cost of the cost of

Carbide's

Continued from Page 4

have — by cutting capacity, moving ming-cialty products, investing in new techno-

"Many Japanese firms that had limbs interest in direct investment abread & Kennedy added, "now operate plants in US. We're going to see a lot more of the left future as Japanese chemical campanas versify into areas such as pharmaceuts and biotechnology, where American

Others, he said, will be forced to saig production facilities or partnership by close to their auto and electronics custom

"I sense an emerging consensus in the

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November 3, 1986

gies and forming new partnerships

nies have solid beachheads."

who are investing in US facilities.

open up the economy and make ithing ing investments abroad," Mr. Keepte told the Tokyo gathering. "The street done, the better it will be for all the

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Methylene Chloride Needs Better Study, Industry Asserts

chloride, the Consumer Product Safety commission should use the available pharmacokinetic data to provide a better assessment of human risk, American Industrial Health Council said last week.

-CPSC should incorporate available pharmacokinetic data on DCM consistent with the increasing recognition in the scientific community that pharmacokinetic data should be reflected in risk assessment, including the choice of modeling procedure, where such data are available," ATHC said in comments iled with the agency.

The industry group says it believes that in assessing substances such as methylene chioride the overall pattern of data provides reasons to depart from ultra-conservative upper confidence limits. Use of pharmacokinetic data in the risk assessment process will provide a better scientific basis for making a decision, says ATHC.

The council says it disagrees with the agency's use of 95 percent upper confidence mits in the methylene chloride assessment process because these limits "proved the deision-maker with a 'worst-case' prediction of risk that can be many times higher than the most likely estimates of risk."

In its comments, AIHC "commends CPSC for recognizing that regulatory decisions on methylene chloride should be based on a comparative risk assessment.''

The group also says it supports the CSPC staff recommendations to convene a chronic hazards advisory panel, since interdisciplinary scientific peer review is a primary

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in assessing the risk of methylene tool for ensuring high-quality risk assess

AIHC also notes that the high spontaneous incidence of mouse liver tumors and lung tumors in the test animals casts doubt on the relevance to humans of these test data.

It advises that the risk assessment should include a discussion of the epidemiologic data as a check on the risks predicted by the model used, and says CPSC should not aggregate benign and malignant tumors in arriv ing at a quantitative prediction of risk posed by methylene chloride.

CPSC approved and published in August a proposed rule on methylene chloride that could result in a declaration that household products containing the chemical are hazardous substances requiring special labels However, the rulemaking process will probably take two to three years to complete.

In a related development, the Halogenated Solvents Industry Alliance has asked Food & Drug Administration either to terminate its rule banning methylene chloride's use in cosmetics, or to reopen the comment period on

The alliance of methylene chloride manufacturers told FDA that the cosmetic uses of the chemical are almost non-existent, therefore "no benefits would flow from regulating this particular situation."

The trade group also noted that FDA's deermination that methylene chloride's cosmetic uses are dangerous would invite lawsuits by manufacturers and users of the chemical in other products.

"When all available scientific data are considered, the data indicate that methylene chloride is unlikely to present any significant human cancer risk," said HSIA.

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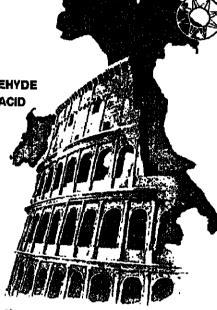
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Contract Chemicals Ltd. a UK-based independent chemical manufacturer was granted a temporary restraining order by a New York County Superior Court judge on October 22 against Henley & Co. Inc. of Montvale, N.J., a subsidiary of the German pharmaceutical producer Boerhinger Ingelheim, and ABM Chemicals Ltd. of Stockport, England, a recently acquired subsidiary of Rio Tinto Zinc, the metals and chemicals

multinational. In the complaint before the court it is contended that Henley, while acting as CCL's agent in the US, was also negotiating to act in the US for ABM Chemicals Ltd., CCL's main competitor. CCL had at Henley's request supplied confidential information to Henley about its products, including price lists, uses, customer lists and specifications, and CCL alleges that this information could be used for ĀBM's benefit.

CCL alleges that it discovered the relationship between ABM and Henley by accident, when a routine telephone call to one of its US customers revealed that Henley had sold an ABM product which is also made by CCL to

Costs are being claimed for time and expenses in having to interview, appoint and train new agents caused by Henley's "sudden

Squibb Vaccine To Battle New Strain

E.R. Squibb & Sons, will introduce a monovalent vaccine for protection against a newly identified strain of influenza that has been implicated in outbreaks among children and young adults in Asia.

The current trivalent vaccine which had

Henley and ABM had been shown to be largely ineffecting against the newly identified strain. While most influenza strains are identified by the Centers for Disease Control in March being the start of a new flu season, this particular intensity identified as Type A/Toliven Tests. strain, identified as Type A/Talwan, washi identified until July of this year.

Squibb is providing the vaccine in response to a request by the CDC for vaccine manufacturers to begin production of a supplemental vaccine for use before the 1986-87 flusesson The vaccine will be available early in

Linda C. Wase, M.D., medical director of F.R. Squibb & Sons, US says, "While no me can predict whether the new strain will care major outbreaks in the US this year, it seems prudent for those individuals who are and of developing serious complications from a fluenza to receive the new monovalent pacine in addition to the current trivalent race

IBA Elects Board For 1986-87 Year

The Industrial Biotechnology Assession has elected its officers for the 1984/72, and increased its board of directman Fifth Annual Members' Meeting.

Officers are: Dr. George B. Rathmand Amgen, chairman; Hugh A. D'Azdukk Schering-Plough, vice-chairman; Dr. John Norell of Provesta Corp., Phillips Petrolem, secretary; Dr. Jerry D. Caulder of Myone. treasurer; and Richard D. Godowa pres-

Other directors on the board are Dr. Ronald E. Cape, Cetus Corp.; Dr. L. Patrid Gage, Hoffmann-La Roche, Inc., Gabit Schmergel, Genetics Institute, Inc., Robet IBA board of directors for the first in were: Dr. Will D. Carpenter, Monsanto G. Dr. Ralph E. Christoffersen, The Uppin (). Dr. Nicholas M. Frey, Pioneer Hi-Brelik national, Inc.; Dr. Kalph W. F. Hardy, b Technica International, Inc.; Dr. Davidi Jackson, E.I. du Pont de Nemours & Cap Hubert J.P. Schoemaker, Centocor; and R Karl II. Voepel, Miles Laboratories, inc.

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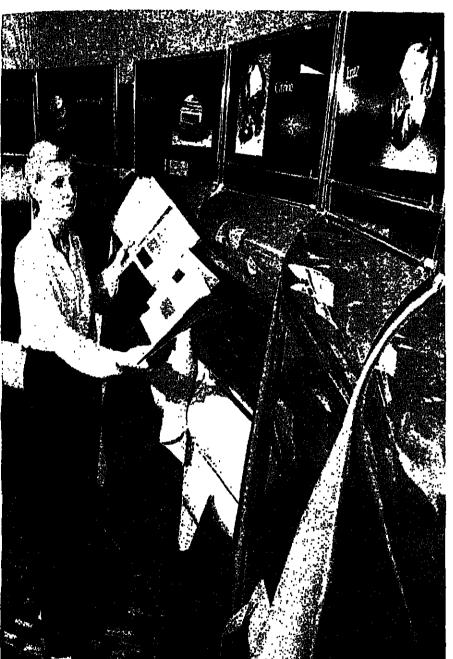
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Solvent Rules Spur New Auto Finishes



EPA's Standards on Solvent Emissions Have Us Auto Makers Scrambling To Beat the '87 Compliance Deadline

By OWEN KEAN

Car makers have until next year to comply with solvent emission standards implemented under the Clean Air Act, so the heat is on to produce attractive auto finishes at minimum pollution levels.

To comply with these regulations, auto makers and their paint suppliers have shifted their coatings technologies from solvent-based lacquer paints to highsolids, reduced solvent content base coat/clear coat technology.

Frederick F. Rhue, vice-president of automotive and industrial finishes for the coatings and resins group at PPG Industries, Inc., a major coatings supplier to the auto industry, says high-solids base coat/clear coat finishes now account for more than 50 percent of US auto topcoats.

This topcoat system consists of a highly pigmented base coat, mostly a high-solids acrylic resin, and a protective clear-coat on top, also acrylic-based, that adds luster and protection to the finish.

Mr. Rhue says Chrysler, American Motors and the US-based Japanese makers finish all their autos with the base coat/clear coat technology.

Ford has converted nearly 100 percent to base coat/clear coat, while General Motors still has substantial dispersion lacquer paint systems in place.

GM PHASES OUT LACQUERS

Joseph Piazzon, director of paint for GM's Buick-Oldsmobile-Cadillac group, says GM is phasing lacquer-based paints out on its assembly lines. He says the company has no timetable for replacing lacquer coats, other than as individual assembly lines are taken out of production for renovation.

Base coat/clear coat systems are currently solvent-based, but their highsolids content sharply reduces solvent levels. In addition, improvements in paint and process technology enable car makers to put on thinner coats, thus lowering paint consumption and reducing solvent use. Coatings are also being applied more efficiently, so less paint is wasted, and again, less solvents are allowed into the atmosphere.

While the acrylic-based base coat/clear coat systems have become the stateof-the-art in auto finishes, recently developed waterborne base coats are mounting a challenge to high-solids' market leadership.

Waterborne base coatings developed by Imperial Chemical Industries PLC and BASF Inmont are both in advanced stages of development, and both could be in commercial use in the next car model year.

ICI calls its coating system "Aquabase" and describes it as a "microgel technology (that) binds groups of water molecules together," with the paint

US auto makers and their paint suppliers have shifted coatings technologies from solvent-based lacquer paints to high solids, reduced solvent content, base coat/clear coat systems. PPG industries, inc., one of the industry's largest suppliers of submotive coatings. says the new technology now accounts for more than 50 automotive coatings, says the new percent of US auto topcoats.

Coatings '86: A \$10 Billion Market Is In View

nology is taking over Page 29 WASHINGTON: EPA is taking a hard look at a widelyused marine antifoulant Page 32 RESIN VEHICLES: Latex makers claim products now equal solvent systems in many ways Page 33 SOLVENTS: The industry is formulating away from materials that may pose hazards. Page 34

Transfer dates the Transfer of the

AUTOMOTIVE: High solids, base coat-clear coat tech- FINANCIAL: Paint makers expect shipments to be up about 5 percent in 1986 Page 35 PIGMENTS: Consumers are looking for ways around POWDER COATINGS: Double-digit growth is predicted for the market Page 38 **COIL COATINGS: Growth opportunities in home appli**ances should bolster the market Page 39



COATING MATERIALS '86 AUTOMOTIVE FINISHES

ICI says the coating has a high viscosity level, so the paint can be applied in thin films, thus allowing the aluminum particles in metallic coatings to be applied smoothly and evenly. ICI says its "Aquabase" system reduces solvent emissions in the base coat by 70 (VOC) emission standards. percent, compared to high-solids formula-

"Aquabase" has been licensed to PPG and Du Pont in the US. ICI says GM will begin Du Pont in the US. ICI says GM will begin using base coat at its Oshawa, Ontario, truck glamour. If you go to high solids for (solvent that, creating the need for even larger and

Tougher emissions standards in Europe have prompted Volvo, Volkswagen, BMW, and Opel to all test the product.

used in the US in the 1988 car model year. He staying within volatile organic compound

By contrast, Mr. Piazzon says that with solvent-based high-solids base coats, "as you cost, the two base coat formulas are equal. ing auto assembly spray booths.

The major drawback with waterborne base coats, however, is that the paint must fully dry before the clear coat can be applied.

Another problem with the waterborne system, ICI concedes, is that stainless steel pipes are required in the paint booth to prevent

Mr. Plazzon at GM predicts that water-borne base coats will be commercially in a drying tunnel, compared to one minute in a drying tunnel, compared to one minute for high solids base coats. This means that the says waterborne base coats maintain the "glamour" look of the paint finish, while will be created along the assembly line. ICI says it is working to cut the drying time in

GM's Piazzon says it would be "ideal" if the waterborne coatings "flashed" (dried) in increase the solids content, there are indicathree minutes. However, he says "it has been and bus assembly plant this month, where it is supplied by ICI's subsidiary, C-I-L Paints, our." He adds that in other aspects, such as

Another problem with the waterborne sys-



AUTO COATINGS: Solvent emission in the reduced in automotive coatings through high solicis systems and advanced when techniques.

corrosion. Solvent-based paints do militare this requirement. As a result, ICI foreseasts introduction of waterborne base out sy tems coinciding with new or renovated a

Another problem with waterborne part is that the atmosphere of the spray but must be controlled to ensure a constants; oration rate, according to Sam Mills, pc process and systems manager for body z assembly operation at Ford Motor Compa

In certain parts of the country, pairs larly the South, high humidity could sign cantly slow the paint's drying time, he plains. To rectify this, auto makers w. have to install "very expensive" coolings tems in the booth, Mr. Mills says.

Inmont (which was acquired by BASFL year) has been using waterborne paint? cars built in California since the early !!" Inmont has painted 5 million carsin Cal: nia using waterborne paints to metic state's rigorous solvent emission stade: according to a company spokesman

While water-based coats did not cale nationwide until recently, BASF lm: with the help of Mobay Corporation, has veloped a new base coat/clear coat logsystem that has attracted great attention

POLYURETHANE SYSTEM

BASF Inmont's system combines a will borne base coat with a two-comple polyurethane clear coat. Mr. Mills at N says the two-component polyurethane! coat is more durable than existing any clear coats.

BASF Inmont which has tested listers? tem at GM's Corvette plant in Boris Green, Ky., says its system requires and thin film base coat which can be didn't three minutes, thus cutting down on relief ment at the spray booth. Also, BASF spirit paint curses at lower temperatures there? paint cures at lower temperatures that

ventional systems, thus cutting energy of Dr. Volker Mirgel of Mobay says her component polyurethane clear case higher chemical resistance and greaters retention than conventional acrylic field.

The system works by reacting a with polyisocyanate in the spray guided supplies these raw materials to have mont. Urethane coatings are already as sively used by car makers on love the parts to prevent point chirologicals. parts to prevent paint chipping can

flying stones. As a clear top coat all over mills favors polyurethane for "having mills favors polyurethane for "having durability against industrial and initial out," than acrylic clear coats.

It withstands the rigors of the squashed insects and other corroding the says. GM's Piazzon says the appearance with the two-compositions of the two-compositions.

and durability of the two-cor and durability of the urethane clear coat is "yery desirable where the clear coat is "yery desirable mobay's Dr. Mirgel says Merchanes of minimum component polyurethanes of minimum component polyurethanes of minimum component polyurethanes of minimum components in one assembly line Rowers."

Continued on Page 40

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ATOCHEM

COATING MATERIALS '86 WASHINGTON



EPA Takes Hard Look At Marine Antifoulants antifoulants antifoulants have a lifespan of six to seven years while freely associated TBT or copper-based paints last approximately two years, further reducing the cost of hull mainte-

By GLENN HESS

Environmental Protection Agency says it expects to decide before next Summer whether it will temporarily suspend the use of certain tributyltinbased antifoulant marine paints on all commercial and recreational vessels.

EPA is studying the effects of those paints amid pressure from some researchers who say deformities in European shellfish and ban on the material.

Tributyltin, or TBT, is a popular and effective marine paint additive that prevents barnacles and similar sea creatures from latching onto boat bottoms and causing reduced fuel efficiency and frequent — and expensive - drydocking to have the hull scraped.

The Navy has indicated a desire to paint its cleaning and a 15 percent annual savings in fuel consumption due to a reduction in the drag caused by fouling organisms.

In addition to the \$150 million annual savings, the Navy notes that copolymer TBT

However, some researchers believe TBT paints may be too effective because the chemical has been shown to have lethal and sub-lethal effects on molluscs, such as oysters, and other, non-target organisms.
TBT has been called the most toxic sub-

stance ever deliberately introduced into the marine environment, and it is these other, entire fleet with TBT paints, estimating a \$5 unintended, effects on marine life that have million annual reduction in the cost of hull caught the attention of Federal investiga-

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Recent research on TBT is posing bother. some questions on the chemical's impact be yound its stated use," says Rep. Walter & Jones (D-N.C.) chairman of the House Menchant Marine and Fisheries Committee.

"We now know that it can have sering consequences — at extremely low levels for valuable fisheries resources such as on ters. Its effects on other marine life and a those further along in the food chain - the consumer of affected seafood — is current unknown," he says.

Last January, EPA began a special revisi of the nine most common TBT antifoular paint formulations to determine their effects on non-target organisms. The first step of this review — and its current status — isto request data from TBT paint manufactures The EPA study may take from three to fite years to complete.

While the agency fills in the data gay.

John A. Moore, EPA assistant administrator for pesticides and toxic substances say it may be necessary to impose interim restrictions on TBT paints until the comprehensive study is completed. He says a decision will

probably be made in March or April.
At a congressional hearing on the TBT controversy, Robert J. Huggett of the Virghia Institute of Marine Science at William and Mary College, said he became curious about paints containing TBT when he used one of

"It was so effective, I wondered why," !! told the House Merchant Marine and Fig. eries oversight and investigations subcor; mittee. "I thought I should take a clear

ban on all tin-bearing paints in US waters would create economic havou...'

He notes that after suffering a nearly 1% percent incidence of Pacific oysters will severe shell deformities in Arcachon Be France in 1981 banned the use of TBT para on all vessels less than 80 feet in length

Unusually thick shells with a ball shape rendered the French oysters unmarketal because of their old shape and the smi amount of meat they contained. Two year after the ban, Mr. Huggett said deformation had been cut in half and settlement of its oysters had increased dramatically.

Both Japan and England have banned limited the use of certain TBT products. Although no effects have been discovered in oysters along the East Coast of the US, M Huggett says laboratory tests have revealed that TBT can have toxic effects on shellfish

"Since some of the reported toxicity value are in the part per trillion range and the probability that some may have been under estimated, it is prudent to exercise extreme caution when evaluating the costs and ber fits of TBT in antifouling paints," "

Huggett advised the lawmakers. Asserting that TBT from recreational sels has contaminated a major portion the Chesapeake Bay, Mr. Huggett says he is the contaminated the says he is the contaminated the conta lieves the available evidence is sufficiently warrant some sort of restriction. "I believe the potential is there to cause some serior

harm," he says. Lenwood W. Hall, Jr. of Johns Hopkins versity says he agrees that the use of Isl coatings presents potential environment problems to non-target aquatic organisms

He says results from various laborator toxicity studies have shown acutely toxic to sensitive estuarine aquali life at extremely low concentrations.

life at extremely low concentrations.

"These compounds may cause potential environmental problems in the Chesapest environmental problems in the Chesapest environmental problems in the Chesapest environmental problems in recreation and commercial vessels has been increasing in recent years," Mr. Hallisays

It has been estiamted that organism if the partial that the partial paints are used by 80 to 90 percent of all large commercial vessels that the Maryland waters of Chesapeste 184.

Continued on Rage 40

RESIN VEHICLES

Latex Systems Gain

the two most widely used resins for architectural coatings last year were acrylic and vinyl, both of which are used in water-based, or latex, systems.

Vinyl resins accounted for 32.5 percent of the market, acrylic resins 26.3 percent, and alkyd resins, used in solvent-based systems, held a 25.9 percent share of the market last year, according to SRI.

compared to solvent-based systems, which

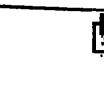
Latex paints are easier to produce because of their lack of effluent problems, and easier to handle because they are odorless, non-flammable, and removable without the need

According to one coatings maker, "latex resins paints generally work on any surface, have excellent durability, and have a longer serviceability life than conventional solvent

Later resins perform very well on alumlmm, aids another source, and outperform

The reason many customers continue to use solvent-based paints, according to one maker, is that "water fails on them" in matlers of adhesion, spotting, and water resist-

There are substrate problems involved in paining over a solvent-based coat that may







At Solvents' Expense

COATING MATERIALS '86

solvents penetrate into wood better than la-Environmental concerns continue to tex for such applications as deck paints. stimulate use of latex systems in the architectural coatings industry, at the in deciding which resin to use, customer prefexpense of solvent-based systems. erence plays a role: "Some customers are very loyal to solvent-based paints," says a

According to Stanford Research Institute.

Skelst Laboratories expects use of latex resin systems to grow at an average annual rate of 2 percent over the next five years could see a slight decline.

The movement toward water-based syslems is both "highly desirable from an eco-logical point of view," according to Peter V. Robinson, associate director of polymer and coatings research for Glidden Company, and "economically desirable" in terms of relalive costs. In addition, he asserts, the per-formance of water-based paints is now in many ways equal to that of solvent-based

solvents in adhesion to galvanized iron.

Still, solvent paints have their adherents.

With water-based paints, he continues, there are limitations on application conditions related to high humidity and low tern-

require the use of a solvent-based primer to gain adhesion and then two coats of latex top coat before approaching one coat of solvent lop coat in performance characteristics.

One resin supplier observes that solvent-based systems "still have some specific advantages in stains, high-gloss paints, and ad-



Glidden's Robinson says that, taken incrementally, progress during the past 5 to 10 years in controlling the ability of waterborne paints to flow under various conditions

has been fairly substantial.

One area of latex advancement involves high-gloss paints. Rohm and Haas Company, the leading acrylic resin supplier, has been promoting resins for high-gloss applications that "give you another dimension," according to one coatings manufacturer, because previously one "couldn't quite get up to a high gloss" with a latex resin.

Though acknowledging that Improvements in latex paints have been gradual,

hesion characteristics." Others note that

According to Sherwin-Williams Company,

One coatings supplier says that one of Rohm and Haas' high-gloss products retains gloss longer than a conventional alkyd resin, but does not start out as glossy. Another

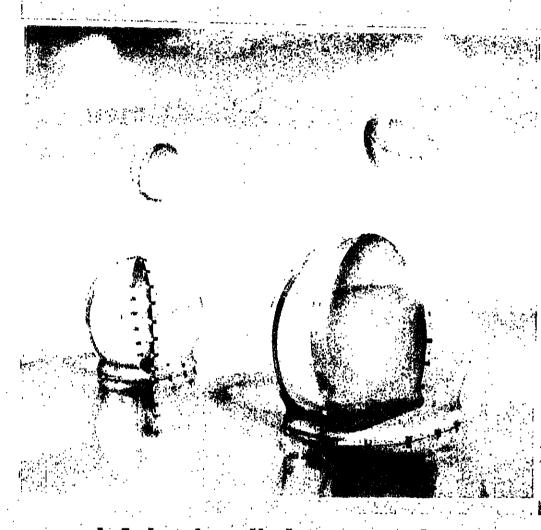
Rohm and Haas high-gloss resin reportedly

performs better in a salt spray chamber test than other water-based products, but not as well as most solvents.

High gloss is a nut every latex manufacturer would like to crack," says the source, but the problem is that latex and solvent paints are chemically different. "With the latex, you get a continuous, seamless film.'

Other concerns that latex makers are said to be addressing are rust inhibition and stain suppression. Rust is often a problem in painting over wood where nails are used, as the water-based paint can corrode the nail. Staining occurs when coloring materials. such as those in raw lumber, come through the paint.

Where latex paints are used in exterior Continued on Page 40



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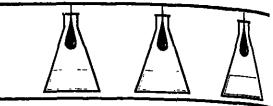
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COATING MATERIALS '86 SOLVENTS



Solvent Makers Eye Compliance Deadline

By RONALD BEGLEY

The solvents industry is busy reformulating away from oxygenated solvents coming increasingly popular within the inwhich pose potential health risks to workers. At the same time, it is moving more and more heavily into high solids and waterborne technologies.

volatile organic compounds (VOC's).

Propylene glycol-based solvents are bedustry. Spurring the growth in these products is increasing industry awareness and con- away from them more extensive. cern over widely publicized scientific studies showing toxicity of ethylene glycol mo-noethyl and monomethyl ethers (EE and EM) This move, along with the developments in and their acetates. The products have been uxygenates, is part of an effort to meet next shown to cause birth defects and testicular traditionally produced in relatively small

ground in the market over the past few years. The switch to oxygenated solvents in general was itself initiated by the need for compliance with the Clean Air Act's demand for the reduction of VOC's in the atmosphere.

The resulting turning away from hydrocarbon-based solvents led the way into in-creased use of high solids and waterborne technologies. In these areas oxygenates have lound wide utility.

At the same time, the toxicity problems associated with EE, EM and their acetates have become more apparent, and the move

Picking up the slack left by the removal of pionate (2-EEP). These materials, although year's deadline for compliance with the damage, and have been steadily losing quantities, are currently growing rapidly at



SOLVENT EMISSIONS: The coatings industris busy reformulating away from solvents with pose potential health risks to workers, while moving at the same time to higher solids and water-based technologies.

the expense of EE, EM and their acetates The propylene glycol ethers and their actates perform very well in high solids coal-ings systems. High solids technology is an area that the coatings industry naturally gravitated toward when it became necessary to find alternatives to the traditional high

solvent, conventional solids systems. There is tess of a technological leap in olved in the switch to high solids than there is with a move to waterborne, powder of radiation-cured coatings systems, which all involve a greater degree of equipment modfication and therefore, a greater amound initial capital investment.

The resultant exploration of high solid echnology has yielded coatings of sollds@ tent ranging from 50 percent all the way # to 85 percent. Use of high solids formulations is expected to grow at a rate of 6 to 7 percent a year over the next few years.

Various solvents have been growing in W ularity in high solids formulations. Met amyl ketone has shown itself to be a good versatile solvent. Its growth, however, is a pected to be stymied by problems with a other growing concern in the coatings inde

AUTO PLANT DROPS SOLVENT In one case an automobile manufactum plant was forced to discontinue its use d methyl amyl ketone in new car finishes dub to odor complaints by people living in the

Hexyl acetate is also an effective solven in high solids and has been growing slow with high solids technology, according to Union Carbide marketing manager Daid

vicinity of the plant.

Carbide is preparing to introduce peaks and butyl propionates to the solvent marks These new products offer high transfer elb clency, good solvent cutting power for restand minimum odors, Mr. Lee says, making them attractive for the high solids end of the

industry.

Waterborne technology, the other main ternative to conventional solids formily tions, is experiencing significant growth is with high solids, the use of PM and its action is growth in the second of the secon is growing in this area, at the expense ethylene glycol-based solvents.

Members of the industry who have no the move to propylene glycol-based have discovered some benefits with the terborne technology, according to Arch John Quinlan, marketing manager for "Arch soly" telegration

solv" solvents. He points out that the main benefit in hanced resin systems has been found with hanced resin systems has been found with propylene glycol ethers, thus improving skill life while maintaining product quality, be life while maintaining product quality, be says. Mr. Quinian expects to see double did growth in propylene glycol-based solvent over the next few years.

over the next few years. Major growth areas for waterborne

i kalangan ang kakera ing pangkabila

COATING MATERIALS '86 FINANCIAL

Coatings Men Primed For 5 Percent Gain

The more than 1,200 companies comvising the US coating industry are aising their gallonage shipments this year by about 5 percent to an estimated 940 million gallons, while dollar volume, swelled by 7 to 8 percent average price increases in the architectural paint segment, should reach just about \$10.1 bil-

Following the acquisition of Inmont Corporation from United Technologies Corporaion by BASF AG of West Germany late in 1985, two important acquisitions occurred

The purchase of Ford Motor Company's automotive paint facilities by E.I. du Pont de Nemours & Co. puts Du Pont in closer contention with BASF and PPG Industries, Inc. Thus, the automotive coatings industry has so closely followed the pattern of consolidation in the industry it serves that the Big Three auto makers are now supplied by a Big

Incontrast, the architectural paint inclustry remains as decentralized, diverse, locall individualistic and personal as ever. Here over 1,200 paint makers move their products into hundreds of thousands of local

Imperial Chemical Industries' acquisition of the Glidden paint operation of SCM Corporation will not detract from this diversity.

largest architectural paint producers, but the combined volume of these ten producers amounts to only about half of this year's \$4.2 billion volume of architectural paint.

Sherwin-Williams is by far the largest producer of architectural paints, with a volume of more than \$800 million at the manufacturers' level in the US this year.

Next largest are PPG, which has under half of its \$875 million coating volume in architectural and special coatings, and Glidden whose \$400 million volume is all architectural and special coatings

Other big architectural paint makers in the \$300 million sales range are Valspar Corporation, which became blg by acquiring Mobil Corporation's paint business; Benjamin Moore Corporation, and DeSoto Coatings, Inc., which sells a large volume of its paints through the Sears department stores.

Inmont, which ranks itself as second largest in original automotive coatings and third largest in refinishes, has added to its line the refinish topcoats of the BASF aftiliate that acquired the automotive coatings business of the Cook, Paint & Varnish Co. some years ago.

Immont's strategy, a spokesman says, is to deliver a total package to its customers, including paints, phosphates, sealants and re-

Immont also is building satellite plants near its major automotive customers' assembly plants. Already in operation is a facil-

third, for the GM facility in Tarrytown, N.Y. Each of Inmont's new plants will provide not only "just-in-time" control of inventories of OEM coatings, but also continuous on-site

quality checking, the spokesman says. Inmont also has opened a 55,000-squarefoot new applications research laboratory in Southfield, Mich., adjacent to an existing automotive R&D plant. J. Larry Jameson, Inmont's president, says the facility answers the auto industry's expressed need for more process development and product engineering—responsibilities previously assumed by the auto makers themselves.

DeSoto Chemicals' total sales in the first six months were \$228 million, up 3 percent from \$221 million last year, and earnings from operations edged up to \$7.3 million from \$7.2 million.

OTHER PAINT MAKERS

Industrial markets have been stronger than house paint business so far this year, but many of DeSoto's industrial products eventually go into consumer products. The latter include can coatings and siding coatings.

DeSoto has developed a coating for optical fibers to replace copper telephone wires. Conversions to the new fiber are under way in Japan thorugh Nippon Telegraph & Tele-phone Company; in England, through a program managed by the National Post Office, and in other European companies through government-sponsored programs.

Conversion in the US has been slow, a De-Soto spokesman says. In fact, Corning Glass Works has laid off a significant number of employees because of a slowdown in US sales

DeSote's system is based on ultravioletcured coatings. This system has not only

ity serving two Chrysler plants in St. Louis, Mo. Another to serve the GM plant in Linden, N.J., will be finished in December, and a coatings for optical fibers, the DeSoto spokesman says.

In Buffalo, N.Y. Pratt & Lambert, Inc., a oducer of paints, chemical coatings and adhesives, had sales of \$97.9 million in the first half, up from \$94.1 million a year ago, and net income was \$3,256,000, versus \$2,998,000 last year. Third-quarter net income is estimated at \$2.3 million

"Sales to defense contractors, product finishers and packaging/paper coverters have been sufficiently brisk to overcome weaknesses in corrosion control, footwear, farm equipment and general aviation markets." says R.D. Stevens, Jr. chairman, and J.J. Cas-tiglia, president. House paint demand has been satisfactory, they add.

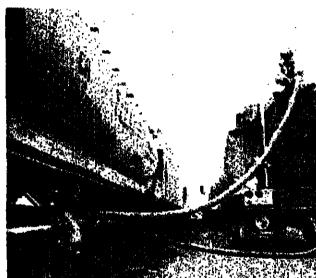
H.B. Fuller Company, diversified spe cialty chemicals company headquartered in Arden Hills, Minn., near Saint Paul, says its largest operating group—adhesives, sealants and coatings—continued to perform well during the third fiscal quarter ended

Anthony L. Andersen, president of Fuller, reported nine-months sales of \$399.6 million, up 14 percent from \$341.3 million a year ago, and net carnings from continuing operations of \$13,765,000, up 51 percent from

Instico Corporation, a diversified company based in Meriden, Conn., had 1985 paint sales of \$230.6 million, up from \$214.8 million a year ago, and operating profits of \$17.9 million un from \$16.9 million.

In Grand Rapids, Mich., Guardsman Chemicals, Inc., diversified coatings products, recorded third-quarter carnings of 1,169,000, up from \$844,000 a year earlier.

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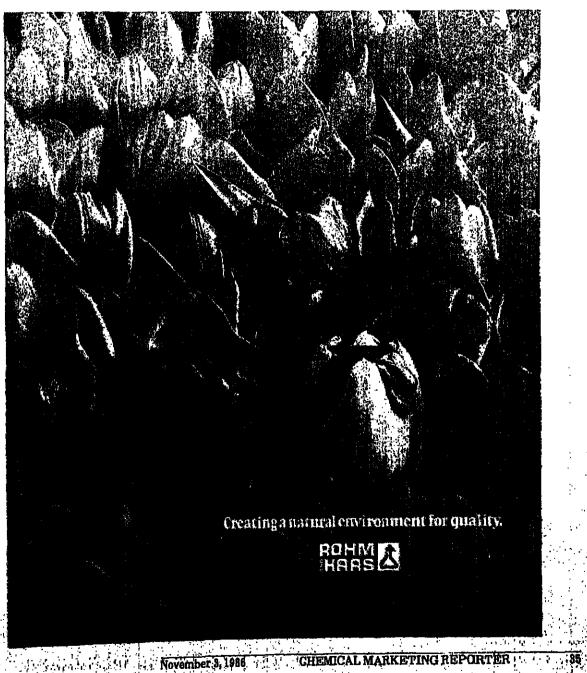
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Continued on Rage 40

November 3, 1986

COATING MATERIALS '86 PIGMENTS





Paint Makers Seeking Substitutes for TiO₂

Within the past few years, steady increases in the cost of titanium dioxide, by far the largest volume paint pigment, have challenged researchers to develop innovative alternatives to the white col-

Demand for TiO2 is strong, and all producers of the pigment plan significant capacity expansions in the near future. Many of their customers, however, feel that the high cost of mining titanium ores, the current scarcity of rutile and the expense of upgrading ilmenite, as well as the cost of switching to the environmentally safe chloride process, will make higher TiO₂ pricing inevitable.

"Any substitute for TiO, which does not lessen paint quality has excellent market potential," one formulator says.

While no synthetic substitute for TiO₂ has yet surfaced, plastic products which allow for replacement of up to 25 percent of the total amount of TiO2 in final paint formulations have established a growing market

presence in the paint industry.

Relatively simple in design and fairly inexpensive to produce, these spheres of clear plastic, between 0.4 and 0.7 microns in di-

ameter, contain one or more "microvoids". These are tiny spaces which fill with air as the paint film dries, reflecting light, and greatly increasing the opacity of the final paint product, while offering substantial savings in TiO2 as well as binder and resin costs.

Depending on the type of microvoid bead,

It's logical. Bring us your color problem. We'll supply the dye or customize one for you that's

lightfast, pH stable.

the materials can be used in either latex gloss or flat mid- to high-performance white or pastel paints with a high titanium content. They are compatible with water-based formulations, and have already carved a niche

for themselves in the architectural paint seg-Although these have not yet seen the tremendous growth shown by plastic pigments in the paper coatings market, producers report that paint demand for beads has been showing double-digit growth since the products were first developed and marketed

in the late 1970's: Today, US paint companies have either developed their own plastic extender patents, licensed those of other firms, or are buying from the two sole US distributors of microvoid products, Rohm and Haas Company and Enterprise Companies, Inc. of

Rohm and Haas developed its own microvoid technology, which it markets under the "Ropaque" trade name, while Enterprise Companies licenses technology for "Sprindrift" polymer developed by the Dulox Division of ICI Australia, Inc. The two products have different properties and are used in different applications, but both are based on the same basic microvoid principle

Glidden Paints, now part of ICI Americas, was, along with Dulox, one of the first to develop plastic extender technology. The firm does not market its plastic product, but uses its own patented polymer internally in its own lines of high-titanium content paint.

James Saynesbury, a marketing representative at Glidden Paints, Inc., explains that the Glidden product and plastic microvoid products in general allow for substitution of over 10 percent of the total TiO₂ required, reduce binder and resin requirements, and enhance washability of the final

"With calcium carbonate alone, you lose too much 'washability' in final product," he says. When CaCO₃ is used in conjunction with plastic vehicles," you get both better hiding ability and high washability."

The one commercial drawback he sees to

the use of plastic extenders is that they require a good deal of product redesign, and a fairly extensive research and development

"You can't simply take a latex formula, remove some of the TiO₂ and replace it with olymer. You have to reformulate the

CHANGES IMPROVE PAINT QUALITY

He feels, however, that the formulation changes are worth the improved quality of the final paint product and the cost savings. Rohm and Haas developed its opaque poly-

mer in 1979, and began to market the product in the early 1980's. Pamela Rogers-Moses, product manager for "Ropaque," describes OP-42 and OP-62, the company's original and improved opaque polymer paint products, as acrylic-styrene polymer spheres between 0.5 and 0.6 microns, with a 0.3-micron hollow

Originally filled with water, they are meant to be used in water-based emulsions. When paint is applied to a dry surface, water diffuses out of the microvoid as the paint film dries, and the voids fill with air; scattering

light, and improving paint film opacity.

Depending on paint formulation,
"Ropaque" allows for replacement of between 10 and 25 percent of the TiO, used per gallon, and cost savings of 10 to 33 cents per It cannot be used with oil-based paints, but

It cannot be used with oil-based paints, but works well in gloss and semi-gloss, as well as some flat latex applications, providing better hiding capability than TiO₂, alone, Ms. Rogers-Moses explains.

While she emphatically states that it "will not put any TiO₂ producers out of business," opaque polymer product is finding doubledigit growth in latex applications, and the market is expected to continue to expand at

market is expected to continue to expand at this rate through 1990.
Enterprise Companies has been marketing

"Spindrift," for the past seven years.

Walter Krason, vice-president of research and development for Enterprise, explains that "Spindrift" is not competitive with Rohm and Haas' product. Although it, too, improves opacity, it is used only in fall paints rather than semi-glass later. paints, rather than semi-gloss latex.

"Spindrift" is made of polyester-styres beads, with 6 percent of the total volume of each bead made up of TiO2. The product is said to offer an average of between 12 percent and 15 percent savings on pigment and significant savings on resin and binder.

Currently, "Spindrift" sells for 35 cents per pound. It has been showing 10 percent annual growth since it was first marketed. Though its market is not as large as that

for "Ropaque," and is more specialized, Mr Krason reports that just under 5 million pounds per year of the product are currently being sold to most major US paint manufac-turers. This 10 percent per year growth rate is expected to be sustained through 1999.

Although both products require substantial changes in formulation, many feel the savings they generate more than justify R&D expenditures. Currently, several major paint companies are involved in extensive develop ment programs involving polymer

Meanwhile, traditional pigments and min-eral extender materials are showing stead not spectacular growth, hovering around the 2 percent mark this year, depending or their compatability with water-based an high-solids formulations.

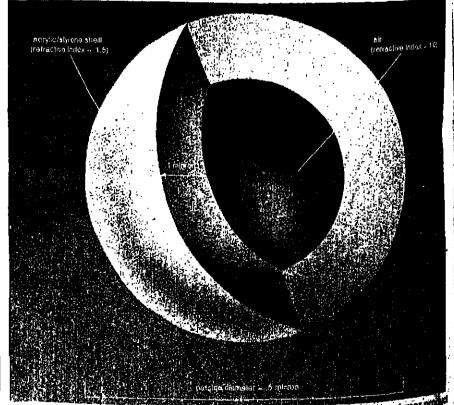
According to Charles Kline & Co.'s mo recent survey of pigment use in the paint industry, the total market for pigments and mineral extenders in paints is expected to reach 1.5 million tons, or 3 billion pounds the year, generating over \$1 billion in revenue By 1990, they expect the market to grow to 1.7 million tons and \$1.2 billion in revenues

As usual, the lion's share of the pigment's market will be taken by TiO₂. Demand for this pigment last year totalled an estimated 865 million pounds, and this year, it is expected to grow by 2 percent, to reach 811 million pounds, or 93 percent of the total pigment market.

The paint market for iron oxides is a pected to show similar growth. Last yes, demand for this pigment totalled an estimated 125 million pounds; this year, the figure is forecast to reach 128 million pounds.

Reflecting the trend away from oil-base

paints, zinc oxide demand fell 4 percent from 1984's level to 26 million pounds last year



MICROVOID BEAD: Opacifying power of Rohm and Haas Company's "Ropaque" polymer products are being used to replace up to 25 percent of TiO₂ in some paint formulations.

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COATING MATERIALS '86

POWDER COATING

Powder Coatings Set For Stronger Growth

Powder coatings' share of the US industrial coatings market should more than double between now and the early 1990's, according to producers of the materials, who see annual growth rates of 12 to 15 percent over the next five years. products.

Powder coatings currently account for about 6 percent of the industrial coatings market, compared to around 3 percent at the beginning of the decade, and their market share is expected to reach 15 percent early in

While powder coatings were invented in Europe some 30 years ago, they didn't begin to catch on in this country until the mid- to late-1970's.

The process works as follows: dry powder is pneumatically fed from a supply reservoir to a spray gun where a low amperage, high voltage charge is imparted to the powder

The powder used in the powder coating process is comprised of resins and pigments and in its dry, formulated state is then sprayed onto a part to be finished.

The parts to be coated are electrically grounded so that the charged particles propart's surfaces and held there until melted and fused into a smooth coating in the baking

or by an automatic process, where computer programmed robots can perform the spray-

ing in booths, some more than 100 feet long. Observers claim that the wide variety of equipment available makes powder coatings feasible for the small end-use manufacturer, as well as for the large user who may need an extensive finishing operation for multiple

Powder coatings fall into two broad categories — thermosetting and thermoplastic. The choice of which to use depends largely on the application. With both types, heat is applied and the powder melts, flows and forms

dvances (in the **A**architectural extrusion market) will be coming in the very near future."

Thermosetting powder coatings are far more common than thermoplastic powder coatings. Sources estimate that more than 90 percent of powder coatings are thermoset-

Generally, thermosetting powder coatings jected at them are firmly attracted to the are used in decorative applications, or when comparatively thinner coatings are desir-

Thermoplastic powder coatings, on the The coating process can be done manually, other hand, are more suitable for items re-

quiring a thick coating, where extreme perormance requirements must be met.

The principal resins used in the termosetting-type powder coatings are epoxy. polyester and acrylic. These are sometimes crossed by manufacturers possessing sophisticated equipment, to gain the best proper-

Thomas Toplisek, manager of marketing development at Pratt & Lambert, notes that while no new resins are expected to be developed soon, the current resins will probably be improved. Thermoplastic-type coatings mainly use vinyl, nylon and fluoropolymer

Consumption for decorative uses is higher than functional consumption, and its growth should be greater, producers agree. For example, Dow Chemical USA forecasts decorative consumption will rise to 93 million pounds by 1988, while functional uses should increase to 42 million pounds. Current consumption figures are about 58 million to 60 million pounds for decorative, and about 35 million pounds for functional uses.

POWDER COATINGS: One of the fashal grow-

ing segments of the coatings industry, which coatings' market share could reach 15 perces

in the 1990's. Powders are a preferred inhibits such things as wheel rims, refrigerator texts

electrostatic guns, two reciprocators an

based system is \$110,000, for two water was

booths, one dry filter booth, four automatic

electrostatic high speed atomizers, two mar

ual electrostatic guns, and paint heating

Powder coating material costs rema

higher than those for most other system

The annual cost of coating 12 million squa

feet of space would be \$363,600 at a dry-lit

thickness of 1.5 mils. Substituting gallons

pounds, conventional solid material we

cost \$333,600, and high-solids material will

However, as Mr. Bocchi and several mat

facturers point out, powder makes with

these costs in total operating expense Based on material, labor, cleanup, mair-

nance, energy, sludge disposal and depreca

tion costs, total annual operating costs it

powder are \$481,000 (.0401 cents per square

cost for conventional solvents (.0436 cc.

per square foot), \$537,200 for high 50.

terborne coatings (.0495 cents per squi

owder coatings market share should more than

PCI also notes that powder's energy to

sumption is 30 to 50 percent lower than h

other systems, its labor costs are 30 lo

percent lower, and waste is cut by 90 perc Additionally, rejects are reduced by a last

As costs have declined, and powder to

ings have become more accepted, their id

have grown. For example, powder has ken

used more often in the auto and truck make

They are also being used to coat when

According to Richard Finneran, theers

tive vice-president, IPC is coating about

5,000 engine blocks a day, with the potential for much more. Engines are coated to miss

mize rusting and improve appearance.
Charles Grubbs, development specials
Mobay Chemical Corporation's coating in

sion, like other observers, thinks the au

Continued on Page 40

tive industry offers a big opportunity, and

Powder also continues to make h

Industrial Powder Coatings, Inc., is apply:

six-cylinder engine blocks.

calls this "a critical area."

in many under-the-hood applications.

of four or more.

double by the early 1990's."

.0448 per square foot) and \$594,000 for 1: .

foot). This compares with a \$523,600 au.

The average start-up cost for a high-solid

safety interlocks and stand-olfs.

and washer tops.

cost \$345,600.

According to the Powder Coatings Institute, Alexandria, Va., more than 2,000 manual and automatic powder coatings operations exist today, roughly double the number just two years ago. These figures apply only to electrostatic coating operations.

The increase in operations is attributed largely to Environmental Protection Agency's crackdown on volatile solvent A common problem among many finishing

departments using liquid paint systems has been the increasingly high cost of meeting air and water regulations, as well as the disposal of hazardous and flammable wastes. However, powder coatings contain no sol-

vents and thereby emit negligible, if any, polluting volatile organic compounds. Another advantage of powder coatings is that oversprayed powder is recycled, so hardly any solid waste is generated. PCI estimates powder's utilization rate at 95 to 97

INNOVATIONS IN POWDERS

Phillip Barnett, regional sales manager for Nordson Corporation, thinks that advances in material utilization are among the major innovations in powder coatings.

Mr. Barnett refers to the cartridge booth concept as being "the biggest" innovation of the last five years.

He says that a pleated paper cartridge, described as looking like a car's air filter but taller, separates powder particles from the booth's exhaust air, and traps them on the surface of its filter. Then, the particles become absorbed in an air current, which collects them for recycling to the powder gun. Mr. Barnett notes that separate cartridges are used for each color, so the particles are

Yet another advantage (thought by some to be the most important) is the overall reduction in operating costs, compared to conventional solvents, waterborne and high solids coatings.

Operating costs actually used to hinder the powder coatings industry, because start-up costs are higher than for other coatings. So, even though overall costs were lower, some companies found the initial capital outlay too much to handle.

However, according to PCI and others, a combination of falling start-up costs for powder systems, along with increased costs for antipollution equipment, are helping to overcome this impediment

The falling start-up costs are due to advances in technology, according to Gregory Bocchi, executive secretary of PCI. Two years ago, the initial capital outlay was about \$150,000 for two electrostatic powder spray booths, four electrostatic automatic guns, one manual electrostatic gun, two reciprocators, and two powder recovery systems with automatic recycle. Now, according to Mr.

Bocchi, the cost is closer to \$125,000. in appliance applications. For example being used as a replacement for porcell washer tops and lids. Also, it is crecilific In comparison, the average start-up cost for a waterbased system is \$108,000, for two water wash booths, one dry filter booth, four automatic electrostatic guns, two manual

COATING MATERIALS '86 COIL COATINGS

Coil Coatings Aiming dates for coll coating. For New Opportunities

Expansion in an industry dedicated to coating the output of the struggling steel and aluminum industries is an uphill battle but the coil coating business succeeded, until just last year, in logging impressive growth figures. New applications present the opportunity to contime the upward trend this year and

According to the National Coil Coaters Association, total shipments of prepainted metal coil from US. Canadian and Mexican coll coaters were 3.968 million tons in 1985. down 5 percent from 1984's record-setting level Coated steel dropped 6.1 percent. to 1238 million tons, while coated aluminum gained 1.4 percent.

Almost all the 1985 loss in steel came from the industry's largest single market, coating sleel with a weldable zinc-rich primer for corresion resistance in auto body parts. NCCA reports that shipments in this segment, dropped 10.7 percent in 1985, to 1.278

Replacing the zinc-rich primer is a zinc electrogalvanizing process developed in Japan. While 1986 losses in this area seem to beless severe, many coil coaters are writing off the segment and are instead looking to new applications developed in conjunction rith paint and steel makers.

Most promising as a growth area appears to be the borne appliance industry, a segment that currently accounts for slightly more than 3 percent of coil shipments.

"This is a very high interest area right now," says Robert Currell, vice-president, marketing and product development, at Whittaker Corporation. Within the past few years, he says, appliance manufacturers suchas General Electric Company and White Consolidated Industries, Inc. have converted a segment of their refrigerator and freezer production to incorporate pre-coated metal

Rappy with the results, these and other appliance makers are said to be planning conversion of other appliance lines to coilcoated cabinets. This should occur by 1988 for home laundry equipment and by 1990 or 1991 for kitchen stoves, according to one

For the time being, paint companies are working to develop systems that will meet the rigid specifications the appliance indus-try has already established for post-paint

Paints must be flexible enough to be

COL COATINGS MARKET: Coll coaters have been hard-pressed to meet projects the face of declining markets for steel and aluminum; but observers feel new appropriative continue the industry's upward trand this year and beyond.

cracking, but tough enough to withstand an environment significantly harsher than the one refrigerators face. Stain, abrasion, detergent and corrosion resistance are all necessary, Mr. Currell says.

Converting to pre-painted metal is an advantage to the appliance maker for a number of reasons. High on the list are environmental considerations.

Most coatings in this market are solventbased, and as Federal regulations become more and more stringent, compliance can be difficult for an appliance maker or, for that matter, any company that is post-painting with a solvent-based paint.

For today's coil coater, however, that obstacle has already been surmounted. "This is the only thing we do," says John Benson, vice-president of sales at Roll Coater Inc., "so it was a necessity that we come into

EPA, he says, came down first on toll coaters like Roll Coater that are large solvent users. By now, Mr. Benson feels, most in the business of coll coating with solventbased paints have mastered EPA's regula-

EPA COMPLIANCE EASIER

Complying with EPA is usually easier for a coil coater than for a spray coater. Observers say that in a modern coil coating system, the time between application of the coating and entry into the baking oven is measured in

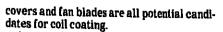
Consequently, up to 95 percent of the sol vent system is still in the paint mixture when the coil enters the oven. There the solvent is easily collected and incinerated, often to be used as a source of heat for the building. On the other hand, with a spray-applied coating, as much as 75 percent of the solvent

has evaporated by the time the piece reaches the oven. Collection of this solvent from the general atmosphere is a more difficult and costly task than collection in the oven. Mr. Benson believes any manufacturer us-

ing solvent-based coatings and planning to expand or modernize is going to seriously consider pre-coated metal.

Weighing the cost of compliance against the savings in plant size and insurance costs that come with pre-painted metal is what is turning more appliance manufacturers to coil coating, Mr. Benson feels.

Another coil coating market just in its infancy is "under the hood" automobile parts. According to John Williams, technical marketing manager for Mebay Corporation, air filter housings, valve covers, oil pans, engine



Any coating used on such parts must be hard as well as resistant to oil and gas. More importantly, the coating must be able to accommodate up to several inches of stamping and drawing that is necessary to form the piece from sheet metal.

Dr. Williams says Mobay has been successful in making headway in this market with coatings that incorporate the company's blocked polyisocyanate technology.

Commercial penetration of the "under the hood" market is further down the road, since the conversion to a pre-coat system means significant investment for the auto maker in machinery such as stamping equipment.

Dr. Williams believes, though, that conversion would be "tremendously economical to the auto industry" and anticipates real coll coating growth in this area.

Another emerging field, according to Charles Todd, coil coating sales manager at Lilly Industrial Coatings, Inc., is the office furniture - desks, (ile cabinets, computer tables and the like -- that is welded or mechanically fastened together and then electrostatically spray painted. This method, say coilers, can be inefficient and can also pose the familiar environmental problems.

Welding coil-coated steel is possible, but difficult, says Mr. Todd, owing to the problem of heat deformation of the paint. Such furniture can be produced, though, by forming coil-coated steel and bonding it with a structural adhesive.

Essex Specialty Products, Inc., a subsidiary of Essex Chemical Corporation, makes "Betamate," a urethane-based structural adhesive that the company claims is suited for this purpose. Thomas Farrell, "Beevenly distributed "Betamate" bond is as centers.

much as three times stronger than a spo

Moreover, he says, a bonded piece of furniture is quieter than a welded one due to the adhesive's relative flexibility. Mr. Farrell says that office furniture made with "Betamate" structural adhesives is not yet on the market but expects an entry by early 1987.

One of the largest uses for coil-coated steel and aluminum is the building products business, accounting for one-quarter of coil shipments in 1985, according to NCCA. Coatings used in this area tend to be polyesters, linear polyesters, siliconized polyesters, and PVC resin-based products.

An area of interest and growth within this market is fluoropolymer-based coatings, which make up about 5 percent of the total coil market.

PENNWALT RESIN USED

Called the "Cadillac" of the business by one marketer, these products are based on the "Kynar" 500 polyvinylidene fluoride resin produced and licensed by Pennwali Corporation.

Four paint companies - PPG Industries. Whittaker, DeSoto and Gildden - make "Kynar"-based products. Howard Fowler, market development manager of PPG's coil coatings group, says that these coatings usually end up on high visibility buildings.

Most involved in the business say "Kynar"based products have been growing above the paint industry average, buoyed by the commercial building growth of the last five

Another growth area for both fluoropoly mers and siliconized polyester coatings is what Mr. Fowler calls standing seam roofing: ridged metal roofing that tends to be tamate," marketing manager, says that an used on commercial buildings like shopping

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Division of NATICO, Inc.

and prices. Or write:







Solvent Standards continued from Page 30

hurdles must be overcome before polyurethane top coats are in wide commercial

One major concern is the presence of highly toxic isocyanates in the spray gun. Dr. Mirgel says the spray booths on the assembly version process he calls a "major invest-

Mr. Mills and Mr. Plazzon both note that sophisticated metering systems are required to insure a proper blend of the polyol and polyisocyanate components, a requirement which Mr. Piazzon calls a "critical issue."

Because of these and other factors, most auto paint experts say that two-component polyurethane clear coats won't be in widespread use until the 1990's.

Another challenge facing auto makers and their paint suppliers is matching the paint finish of steel body panels with plastic body panels which are now painted off-line.

Currently available plastic body panels, particularly those made of reaction injection molded polyurethane, go through the curing process at significantly lower temperatures than do painted metal parts. As a result, plastic parts are currently assembled and painted separately from the major metal

Bee Chemical, a unit of Morton Thiokol, says it has developed a coating system that can make a hybrid steel-plastic auto exterior topcoat appear uniform. Bee calls its product Unicoat," a line of primers and topcoats, it says can allow hybrid cars to be primed and finished in one place.

Bee describes its topcoat finish as a "modified" thermosetting acrylic resin base coat/ clear coat, and its primer is based on the

LOW VOCLEVEL

The paint system can be applied with conventional technology, and has very low volatile organic compound emission levels. the company says. The company also says its layers can be cured at 175 degrees Fahrenheit, allowing them to be used on RIM parts.

Bee has been working on the "Unicoat" system for the past seven years, but the product gained little attention until recently. According to Joseph E. Klein, vice-president of marketing at Bee, three factors sparked auto company interest in Bee's paint system.

First, the company was aquired by Morton-Thiokol in early 1985, giving Bee more financial muscle for research and development work and marketing. Second, the "Unicoat" system recently was awarded a "Q1 Preferred Quality Award" from Ford for products shipped from Bee's Lansing, Ill., manufacturing plant.

In addition to providing higher visibility to "Unicoat," the Ford award stipulates that the auto makers will "give preference to (Lansing) for participation in new part development programs and in source selection."

Mr. Klein also notes that a commitment by Bee to build a multi-million dollar "assembly line type paint line" in Belleville, Mich., wil enable auto makers to test and evaluate the "Unicoat" system on a large scale.

Mr. Klein says the "Unicoat" system has already generated "tens of million of dollars" in sales to the major auto makers and their suppliers, but to date, "nobody's painting the full car with 'Unicoat'.'

At present, the system is only being used on parts located in high abrasion, high impact areas of the car he calls the "stone zone."

He predicts that "Unicout" will "get its first colors awarded for the 1988 model year," although he concedes that "it's a major step for (a car maker) to paint (hybrid models) universally. It takes a lot of risk for a car company to be the first."

and other experts acknowledge that several point, "RIM can't use the same clear coat as

Mr. Piazzon of GM says having "universal clear coats is extremely important," but that using them "creates another problem."

He notes that RIM parts have been painted off line for years." To rearrange the assemline must be sealed off from humans, a conwould create "job spacing" problems, and assembly lines would have "to be redesigned" to incorporate RIM products.

He says this problem applies specifically to RIM products that must be processed at low temperatures. He says no problem exists with sheet molding compound and composite plastics, because available clear coat systems work well

"The concept is a good one," Mr. Piazzon says, and "there is a need for products of that type." However, "the ultimate use of (universal clear coats) is somewhat limited by restrictions in the facility.

EPA Takes

Continued from Page 32

notes, and recent studies have revealed that up to 48 metric tons of tin per year are loaded nto the Maryland portion from small and large water craft.

But Arthur Sheldon, director of safety and environmental affairs for M&T Chemicals Inc., the major manufacturer of organotin chemicals in the world, says laboratory tests cannot be compared to actual conditions of

'Laboratory experiments, while of value n determining the range of toxicity for a chemical, do not address the question of the potential effect in a true ecosystem which in nature presents many complex interacions." Mr. Sheldon savs.

Because laboratory studies and models tend to vastly simplify the environment in order to make estimates, he says it is extremely difficult to use laboratory data to predict the effect of TBT on inland waters. Field studies are needed to make that deter-

mination, according to Mr. Sheldon. He also maintains that although organotin chemicals are classified as heavy metals. they do not accumulate or persist in the human body or in the environment. In humans. Mr. Sheldon says they quickly metabolize to less toxic forms, and the same pattern of degradation occurs in the environment.

Thomas J. Gibbons, director of marketing for International Paint Company, says it is important that regulatory actions taken by the government be based on hard scientific fact because a ban on TBT paints would have severe economic impacts.

"A ban on all tin-bearing paints in US waters would create economic havoc, as well as great enforcement problems, since some 70 percent of all ocean-going vessels are coated with these products," says Mr. Gibbons.

He also contends that a ban of all application of TBT-containing paints within the US or to US flag vessels would cause significant damage to these sectors compared to foreign

Instead, Mr. Gibbons suggests that regulatory considerations focus on acceptable release rates, and points out that TBTs are released more quickly from free associated paint than from copolymer paints.

Copolymers compose 20 percent market and free associated paints, 10 percent, he says. By banning free associated tin-bearing paints, Mr. Gibbons says, 85 percent of the TBT releases would be eliminated.

He says a restriction of free association products would not have a great impact on the US Merchant Marine fleet or on shipyards, but would adversely impact some sectors of the recreational boating industry.

Mr. Mills at Ford says high-solids clear coats "don't have the flexibility strength to be used on plastics." He says that at this be used on plastics." He says that at this

diffusion as surface paint particles dissolve. This type of paint is characterized by a high initial release rate and a short time period of

TBT in copolymer paints is chemically onded to the paint polymer and is released through a bond breaking process of hydroly-New TBT molecules are exposed and released by the gradual erosion of the paint as

the vessel moves through the water. EPA estimates that approximately onethird of the 800,000 pounds of TBT produced annually is used in antifoulant paints, one third in wood preservatives, and one-third in

Solvent Makers

Continued from Page 34

mulations have been and will continue to be auto primers, can coatings and pre-finished wood and flatboard, according to Mr. Lee. "These have traditionally been areas for conventional solvents, but now waterborne has taken them over," he says. He goes on to point out that waterborne base coat in automobile base coat/clear coat systems is an emerging technology which may or may not find widespread acceptance.

One solvent traditionally used in waterborne coats which may not be sharing in that growth is ethylene glycol monobutyl ether (EB). Although free of VOC concerns, EB's close chemical relationship to EE and EM has focussed attention on its toxic effects. leading one industry source to say that EB is suffering from "guilt by association."

EB, an effective coupling agent, plays an important role in waterborne coatings. According to one producer, it accounts for 80 percent of glycol ether solvent demand in waterborne coatings; use of EB has been expanding steadily over recent years. Nevertheless, toxicity concerns are leading many coatings producers to reformulate away

Several solvents are competing to replace the popular EB, which saw total 1984 production of 270 million pounds in the US, according to International Trade Commission fig-

EB accounted for over 30 percent of the total 1983 consumption of glycol ethers and their esters in the coatings industry, or more than 75 million pounds

As it is with other suspect solvents, PM is being used as a replacement here, as is dipropylene monomethyl ether. Another solvent that is growing at the expense of EB is propylene glycol tertiary butyl ether (PTB) which was designed with substituting for EB in mind. Other contending propylene glycolbased products are isopropyl ether, mono-tbutyl ether, and n-butyl ether.

The problem with some of these solvents, though very effective, is that they are more costly than EB --- as much as four times more

expensive in some cases. Besides spurring growth of oxygenated solvents, the upcoming deadline for nationwide VOC compliance has also led to increased use of some chlorinated solvents.

Among these is 1,1,1 trichloroethane, which is the most predominant metal cleaning solvent currently used in the US, according to Dow's Robert Simmons, an industrial marketing manager for that company's

chemicals and metals department. Another chlorinated solvent, methylene chloride, has come under scrutiny from both industry and government due to toxicity concerns. Although predominantly used as a paint stripper, methylene chloride has drawn ways to make powder coatings more used ways to make powder coatings more used to the coating many including many inc some positive attention in recent years as a plastics. Pratt & Lambert's Topisse solvent in coatings formulations, due to the

low level of VOC concerns associated with it. It is considered an excellent solvent, and very difficult to replace. Substitutes under

will be less than one-third of what it was in 1973, according to a spokesman for a major chemical company

In 1973, he says, conventional solids represented 79 percent of the OEM coatings may ket, waterbornes 12 percent, high solid; a percent, and other technologies 1 percent. By 1993, conventional solids will represent

just 24 percent, waterborne 36 percent high solids 31 percent, and 9 percent for theolers, such as powder and radiation-curedost.

Latex Systems

Continued from Page 33

settings, acrylic is said to be the premise resin. "In terms of durability, ultraviole light stability, color permanence, flexibility and surface adhesion," acrylics are peferred, says an analyst at Charles H King

Less expensive vinyl resins take a law share of the interior market, but have to culty matching the performance of active systems in exterior use. At Sherwig-Williams, "with house paints, we use mostly acrylic. Due to cost considerations, we have been working on vinyl, but it absolutely basto meet the performance requirements" before

An Air Products spokesman saysthereisa trend in the industry involving staking onla position somewhere between acrylic and vinyl resins. Vinyl resins are a low margia, nmodity business, he says, and "more companies are trying to move into the middie-ground with specialty materials" in order to earn a higher return.

"The trend is to try to get away with some specialty terpolymer replacing pure acrylic for exterior and interior semi-gloss,"hesays Union Carbide Corporation has a line of acrylic terpolymers that have cut into Robin and Haas' hold on the acrylic market, he

Unocal Corporation says that it is increasing its sales of styrene-acrylic resinsing tectural coatings. "There is no reason why pure acrylic is required," says Mike Brema, nager of polymer market development

A spokesman at Interez Inc., formerly Celanese Specialty Resins, says his company is placing its emphasis on two areas of ther-performing waterborne resins. These are a two-package waterborne epoxy and amine-type curing agent and a two-package waterborne epoxy and acrylic-type cum

Powder Coatings

Continued from Page 38

dryer drum and spinner basket markets A the end of 1985, according to industry figure appliances had the largest share of ports oatings consumption, at 18 percent.

Next was coating of metal furniture (i percent), followed by electrical coatings is 2 percent).

Transportation uses, at 11 percent, show grow because of under-the-hood uses in chinery and equipment also have about! percent of the consumption share.

Mobay's Grubbs notes that the archite.

tural extrusion market has been big is brope (or years. "It'll happen in the US, A vances will be coming in the very and

future," he says. Equipment manufacturers are working of nas drawn with heat-sensitive lieves that a lot has already been done is area, and notes that low-termperature pe

These powders, he says, give the ders have been developed

ethyl ketone, but their high flammability is a serious drawback.

Perhaps more likely as a candidate for replacement in combination with other solvents is n-methyl pyrrolidone, which is also finding greater use in waterborne coatings.

Use of conventional solids coatings by 1993

These powders, he says, give the choice of using high-temperature powders for a longer time.

Another breakthrough may revolution the powder coatings industry, according to the powder coatings industry.

Volstatic, Inc. Called the "Color Special is designed to lessen the time needed for its designed to lessen the time needed for its designed to lessen the time needed for its designed to lessen the time needed for the powders of using high-temperature powders for a longer time.

Another breakthrough may revolution to the powder coatings industry, according to the powders of using high-temperature powders for a longer time.

Another breakthrough may revolution to the powder coatings industry, according to the powder coatings industry. finding greater use in waterborne coatings.
Use of conventional solids coatings by 1993

is designed to lessen the time and property at the conventional solids coatings by 1993

a color change in application adultment.

COATINGS & PLASTICS

ABS Rebounds Continued from Page 5

low when raw material costs fell earlier reach 10 percent. Last year, demand for ABS this year. There was a lag time of two months before prices for the plastic were adjusted, he adds, and any passalongs of higher monomer costs will take a similar amount of time to implement, if they occur at all this year.

The lower US dollar value, which has caused import levels to fall in many chemical markets this year, has had no effect on the ABS market; this year, imports should be significantly higher than last year's 62 mil-

This August, Bureau of Census figures show imports totalling almost 50 million pounds. Continuing at this rate, they are sure losurpass 1984's record of 72 million pounds. At least one producer feels that import

levels are now beginning to stabilize, and should begin to fall over the last quarter this year. As he explains, published figures are frequently misleading, since all of what comes into the US is not necessarily sold. Another producer agrees that import levels will (all over the next few years as US resin makers focus on value-added services and specialty products which cannot be made

Nevertheless, producers concur that imports should capture between 6 and 8 percent of the total US market this year. Working inland from the East and West Coasts, imports continue to affect domestic pricing. Large customers know this cheaper material is out there, and are using this to pressure US manufacturers to bring down prices. The effeet of imports is most pronounced in low-end commodity markets, since most of the material produced abroad does not qualify for use in higher end markets.

FINISHED ABS GOODS

Less obvious than imports of plastic pellets, but still a pervasive market presence are imports of finished ABS goods, which began to surface in the US about 5 years ago. reaching a peak in 1984 and 1985.

Currently, Mexico and the Far East are said to lead in exports of finished machinery and automobile parts containing the plastic. Telephone manufacturing, a small but

once profitable outlet for US manufacturers, has moved entirely offshore, producers report. Without finished good imports, domesic growth for the resin would be 1 to 2 percent higher per year, one producer explains.

Good news for ABS producers in the US this year is that both home appliance and iness machine markets are strong. The Association of Home Appliance Manufacturers reports that domestic factory shipments of refrigerators and other home appliances totalled 33.7 million through September, up 6.4 percent over the previous year.

Similarly, the Computers and Business **Equipment Manufacturers Association sees** revenues from computer sales rising 20 percent this year over last year and business machine sales improving by 3.4 percent. Demand is clearly moving up, they say, after an

extremely poor showing last year. Reflecting the health of these two markets, ABS producers see home appliance demand for ABS tracking GNP this year, while business machine and computer housing demand should rise by between 5 and 6 percent. Next year, producers expect growth in the computer and business machine segment to

THERMOPLASTICS BULK PRICES IN OCT. 1986

	OCT.	SEPT.
Data a	(U8 \$)	(US \$)
Polyethylene-LD,linerlb.	.29-30	25-27
rulyethylene-HD injection in	.2730	24-26
. whattatabe-11 D4 w	.2932	26-30
. nithiobaleus wolding in	.3337	33-36
· ~17=tyrene, a.o	44 47	36-37
Polyvinyl chloride, pipelb. Butene-1 comonomer.	.29-,30	.2629

inks...

fell 5 percent overall, based on lower demand

for roughly 20 pecent of the total ABS mar-

ket, has been weak this year. The Motor Vehi-

cles Manufacturing Association reports that

by the end of the third quarter this year,

domestic passenger car sales fell 2.2 percent

while imports rose 15 percent. In August.

inventories rose 12 percent. Despite higher

sales, September's inventories were still 5

percent higher than they had been the previ-

ous year. Most producers, gauging their re-

sponse to fairly low domestic output this year

PRICES TRENDLINES

The Coatings & Plastics Index reflects

the prices of 13 representative materials

in this sector and the quantity of each

Chemical Prices Start on Page 48

and higher inventories, expect minimal in-

creases at best in this segment of the market.

Although some expect recent sales incentive to have some short term effect on de-

mand, ABS producers are not expecting any

Both Borg-Warner and Monsanto have in-

expanded ABS capacity through debottle-

necking this year. Dow Chemical Company

plans to have a new capacity in Hanging

Rock, Ohio on line by the first quarter of 1987.

stood at 80 percent of nameplate. With the

new expansions, many fear that this figure

will drop to the low 70's, with obvious effects

on pricing.
Although the resin has lost some ground to

cheaper plastics in the commodity areas,

particulary pipe, ABS is said to be capturing

market share from some of the more expen-

ABS-nylon alloys, such as Monsanto's

'Triax" and Borg-Warner's "Elemid," both

introduced this year, currently show great

potential in industrial and automotive appli-

cations. Other pockets of high growth for

ABS include medical instrumentation hous-

Although healthy, the US market has cer-

tainly matured since the days of double digit

growth in the '60's. Despite a worldwide over-

capacity problem in the commodity resin area, producers see growth opportunities for

higher-grades resin developing in Southeast Asia, Peoples Republic of China, Eastern Eu-

rope, and Latin America, small bases which

are showing annual growth rates of from 6 to

12 percent per year and which could boost

Meanwhile on the domestic front, produc-

ers continue to trade higher operating rates

for better prices in an attempt to keep up

LIQUID CRYSTAL POLYMER - Dartco

Manufacturing Inc. plans to reduce prices for its full line of "Xydar" injection moldable

liquid crystal polymers, in an attempt to expand market share for the product.

The company has lowerd prices for its "FC series" of glass and mineral-filled high per-

Continued on Page 44

export figures significantly by 1990.

with this competitive market.

PLASTICS MATERIALS

Since September, capacity utilization has

306.4

WEEK ENDING OCT. 31, 1986

CHANGES/UP

produced in 1985.

Oct. 31, 1986

Oct. 24, 1986

Oct. 3, 1986

Nov. 1, 1985

CHANGES/DOWN

COATINGS INDEX

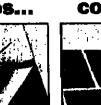
The automotive market, which accounts

in this segment.

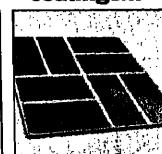
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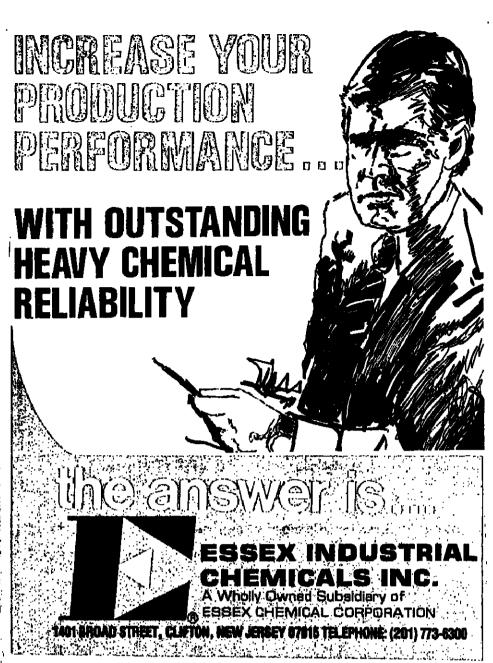
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CHEMICAL MARKETING REPORTER

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November 3, 1986





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CHEMICAL MARKETING REPORTER

November 8: 1986

HEAVY & AG CHEMICALS

NPK Consumption Continued from Page 3

\$17.40 in the three bag sizes; fine grands USP/FCC. \$17.10 in bulk, \$18.10 in the time

bag sizes: extra fine powdered USP/800, \$16.70 in bulk, \$17.70 in 100 pound bags and

Super Sacs: coarse granular USP/FCC \$17.55 in bulk, \$18.55 in 100 pound bags and

PRICES TRENDLINES

WEEK ENDING OCT. 31, 1986

CHANGES/UP

CHANGES/DOWN

HEAVY & AG INDEX

of each produced in 1985.

Oct. 31, 1986

Oct. 24, 1986

Oct. 3, 1986

Nov. 1, 1985

The Heavy & Ag Chemicals index R

flects the prices of 18 representative

materials in this sector and the quantity

Chemical Prices Start on Page 48

Super Sacs; treated free flowing FCC, tt

available in bulk, \$17.90 in the three ba

sizes; industrial, \$16.25 in bulk, \$17.25 into

Riverside Products Corporation is also

ereasing bicarb pricing; its increase is elfe-

tive December 1. New pricing per hundral weight is as follows: USP powdered no l

\$17.55; no. 1 treated free flowing, \$17.

powdered, \$17.70; USP granular no. 4,818? USP coarse granular no. 5, \$18.55; industri

\$17.25. All prices are f.o.b. Cartersville, 6:]

freight equalized, in 50 and 100 poundbags

Both producers cite increased operation costs as being behind the increase Church

Dwight, the largest sodium bicarbonalege

ducer, announced a similar increase in 00

VANADIUM CHEMICALS - Stratege

Vanadium oxytrichloride is moving !

Both prices are f.o.b. Niagara Falk, N.

Foote Minerals and Stauffer Chemid

the two other US producers of vanata

oxytrichloride, have already announced:

ilar price increases. They cited increases

ZINC — Falconbridge Limited has risk its price for "Kidd Creek" Brand high gint and special high-grade zinc, effective in medical

liately.

Product shipped to the US will be be product shipped to the US dollars of the proposed to 50c, per pound (US dollars) of the best between the contract of the contra

creased to 50c. per pound (US and From 47c. per pound, and product set if from 47c. per pound, up (not Canada will cost 69 //1c. per pound, up (not canada will cost 69 //1c. per pound, up (not canada will cost 69 //1c. per pound, up (not canada will cost 69 //1c. per pound, up (not canada will cost 69 //1c. per pound).

Prices for prime Western grade tinuous line zinc with controlled lea

shipped to the US, will be 50 vic. in

(US dollars). Shipments to Canada vi. 70c. per pound (Canadian dollars).

Finally, continuous line zinc with minum added will cost 50 % c. per single shipments to the US (US dollars) and the per pound for shipments to Canada the collars.

Stratcor was created on July 1 as the result

vanadium and tungsten assets.

the price of vanadium metal.

diately.

85c. per pound.

Minerals Corporation (Stratcor) is increase its price for two vanadium chemicals, ele-

her (CMR, 10/6/86, pg. 33).

one ton sacks.

tive November 1.

USP fine granular no. 2, \$18.10; no. 3 iz

cause the \$2 per bushel payment should Sacs; powdered technical, \$16.40 in line free up additional cash for fertilizer pur-

US nitrogen producers will be hit espe-cially hard by the drop in nitrogen consumpion. Many industry observers feel this year's record nitrogen import levels will continue through 1986-1987, leaving US nitrogen pro-ducers to bear the brunt of the consumption

For instance, Mr. Baumes calculates that 1.1 million short tons of nitrogen were imported in the 1985-1986 fertilizer year. With new capacity coming on in Trinidad and Canada in 1987 he says imports could increase even more.

Fertilizer movement has been slow this Fall, and like last fertilizer year, producers are looking toward heavy Spring movement. Sources quote bargeload quantities of ammonia at \$70 to \$75 per ton in the Gulf, noting though, that barge sales are uncommon.

Phosphate producers can alford to downplay the PLD announcement because they are concentrating on the export market. Mr. Nyiri believes the export strengthening will continue, and estimates calendar year 1987 exports will be up 500,000 to 600,000 tons, P205 başis, over this year's levels.

PHOSPHATE EXPORTS UNCHANGED

As it is, Mr. Nyiri says August, September and October each saw about 500,000 tons in P205 export sales, for a 3-month total almost the same as the total for first 7 months of the

Also expected to help exports in the months ahead is the late-August cancellaton of an EEC quota on US ammoniated phosphates. The quota was instituted in retalia-tion for US limits on finished steel imports

Pakistan, India and Latin America are said to be dominating export trade. China is still expected back in the market, although its purchase power may be hindered by a lack of hard currency. Barter agreements are expected to be prominent in months ahead.

Meanwhile, US Gulf bargeload movemen of phosphates is said to be very slow at present. One product puts DAP prices out of river terminals in the Midwest in the \$150-

Bases & Salts

ALUMINUM SULFATE - Tennessee Chemical Company is announcing an \$8 per ton off-list price increase on liquid alum. The \$5.25 per pound from \$4.75 per pound yardium tetrachioride in 3,000 pound cylinder is increasing to \$6.20 per pound from \$55 increase goes into effect as contracts permit and applies to all four of the companies producing locations: Augusta, Ga., Catawba, S.C., Cedar Springs, Ga., and Springfield. the leveraged buyout of Union Carbier

The increase follows similar announcements by Stauffer Chemical, General Chemi-cal and General Alum & Chemical.

SODIUM BICARBONATE - Two producers of sodium bicarbonate have announced price increases of 50c. per hundredweight.

Stauffer Chemical Company's hike is effective November 15 or as contracts permit. The new pricing, per hundredweight, f.o.b. Chicago Heights, Ill., freight equalized with nearest competitive producing point, is as follows: powdered USP/FCC, \$16.55 in bulk, \$17.55 in 50 and 100 pound bags and in Super

PRICE HIGHLIGHTS

INORGANICS IN OCTOBER

Ammonia, US Guif, barges Caustic Soda, US Guif, railcars Chiorine, US Guif, tankcars DAP, US Guif, barges Soda Ash, Green River, Wyo. Bufuric Acid, S.E., tankcars Prices are in short tons and rej	OCT. (US \$) 70-75 90-100 140-150 130-132 73-77 55-60	SEPT (US 5) 70-75 80-90 140-15 130-13 73-77 55-60

Repligen Wins Grant From NIH For AIDS Tests

Repligen Corporation, Cambridge, Mass, has been awarded a \$1.9 million mass, and need a value of a value of recombinant proteins for research on a vaccine against Acquired Immune Deficiency

Syndrome (AIDS). The 27 month contract was granted by the fallonal Institutes of Health (NIII). Under the contract, which will be administered by NH's National Institute of Allergy & Infeciou Disease (NIAID), Repligen will supply recombinant proteins and protein fragments to researchers at NIH and their collabora-

in commenting on the award, Repligen's president and chief executive officer, Sand-led D. Smith, said, "With this contract, the NIK has recognized our accomplishments in various areas of AIDS research. Foremost is our ability to produce highly pure recombi-nant antigenic fragments in large quanti-ties." According to John McGowan of NIAID, this contract makes Repligen the major sup-plier for government experiments on AIDS

Repligen has also submitted the antigenic fragments to the National Cancer Institute (NCI) as part of ongoing collaborative vac-cue research being conducted by Repligen, Centro Inc. (Malvern, Pa.), and NCI's Dr. Robert Gallo, discoverer of the AIDS virus. Thee fragments are now being evaluated as posible AIDS vaccine ingredients.

h addition, Repligen supplies other re-combinant antigenic fragments to Centocor foruse in the first "second-generation" AIDS diagnostic test kit. The kit does not contain lastivated AIDS virus, as do the first-generation kits, and is presently being considered for approval by the US Food & Drug Adminis-

There are an estimated 1 million people in the United States alone who are infected with the virus that causes AIDS, and that number continues to grow. We hope that our ongoing research — including that conducted under the contract — will lead to the development of a useful AIDS vaccine," Mr. Smith

Repligen Corporation develops and pro-duces blochemical and biocatalytic products for the health care, personal care, and indus-

Drug Bill Pressed

Continued from Page 7

the leaderhsip in biotechnology, there should be no hesitancy on our part to engage in

However, Justice Department officials as well as the White House budget office are advising the President to reject the package ecause of the vaccine provision, which fould create a no-fault Federal compensa-tion system for injuries caused by childhood ccinations required to enter school.

Assistant Attorney General John Bolton said the administration is concerned the bill would create a major new compensation pro-gram for which "no legitimate national need has been demonstrated;" would lead to a sharp increase in the role of the Federal judiciary, which would decide injury claims; and it seeks to establish a new excise tox.

Fifty to 75 children each year out of million vaccinated suffer permanent neurologi-caldamage as a result of vaccines, primarily from the periussis component aimed at whooping cough, according to the American Academy of Pediatrics.

The potential for lawsuits has caused the price of the DPT vaccine to rise from \$4 to \$11.40 per dose in the last year alone. Insurers are reluctant to underwrite the liability and when they do, the rates are high. Consequently, 12 of the 15 US vaccine manufactures ers have dropped out of the market.

Under the no-fault system envisioned by the bill, without proving that a drug firm was negligent, a family could be compensated for medical expenses, rehabilitation expenses, wages lost over a child's lifetime and up to 1230,000 for death.

The provisions would also make changes in on law to reduce the unpredictability

profect them if they follow the Ecderal stanlands and requirements The program would go into effect only if Congress approves an excelentary of 10 cents to \$150 on vaccine doses through separate legislation next year

legal damages against strug companies and

Gallium Arsenide For Sale by Alcan Alcan Aluminum Corporation has de-

eided to sell Cryscon Technologies, Inc. of Phoenix, Ariz, a manufacturer of gallium arsenide substrates.

Alcan helped to establish the firm in 1984 and has operated it as a wholly owned subsidiary. The decision does not affect Alcan's other investments in the electronics market which includes purified gallium inetal and galhum arsenide epitaxial water businesses.

Despite its increasing sales, Cryscondocs nicet Alcan's goals at this time for developing business in the electronics market," Timothy C. Tuff, president of Alcan Aluminum Corporation stated "However, we remain firmly committed to the gallium busi-

The company is expanding Epitronics, its epitaxial wafer enterprise in Phoenix, Mr. Tuff says. The expansion includes the purchase of MOCVD reactors, enhancement of existing characterization capabilities, and an increase in office and production facili-

Alcan Electronic Materials, the company's gallium business, has also doubled its purification capacity, Mr. Tuff says

Alcan Aluminum Corporation is a wholly owned US subsidiary of Alcan Aluminum Limited of Montreal.

Gas-Methanol Gets

Continued from Page 3

be about the same as those from gasoline urrently used.

The decision was prompted by a petition filed by the Oxygenated Fuels Association asking EPA to remove the conditions. EPA granted the group's petition in April.

"Ol'A is delighted with EPA's decision," says George Dominguez, executive director of the trade group. "The removal of EI and the other modifications in what has become known as the Du Pont waiver should permit widespread use of the environmentally important alcohol fuel blend."

Mr. Dominguez also points out that the use of Du Pont waiver blend fuels "will permit significant reduction in carbon monoxide and

other atmospheric pollutants." Harry Buchanan, vice-president of Celanese Corporation and OFA chairman, notes that several states, including California, New York, Colorado and Arizona are already exploring the possibilities of using alcohol blends as part of their overall environmental improvement strategy.

"The EPA decision on the Du Pont walver, by removing the EI restriction, will now enable the states and the nation to benefit from this new fuel," says Mr. Buchanan.

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GENERAL (28) ELECTRIC

ChemDesign CDC

November 3, 1986

COATINGS & PLASTICS

Continued from Page 41 formance compounds from \$12 to \$16 per pound to \$7.35 to \$8.55 per pound.

It has also introduced the first reinforced grade of "Xydar" resin, RC-210. This new grade is said to show superior strength, inherent flame-retardance, and high temperature and chemical resistance.

Dartco spokesmen say that it will provide manufacturers with an alternative, not only to metals and ceramics, but also to expensive specialty plastics, such as polyphenylene sulfide and polyetherimide.

Dartco claims to be the first commercial supplier of injection moldable liquid crystal polymers; the firm's production facilities in Georgia and New Jersey account for a total capacity of 22 million pounds per year.

PLASTICS MATERIALS

PHENOLIC RESINS — Information was missing from last week's article on phenolic resins: Reichhold Chemical Company did not announce a price increase. BTL Specialty Resins Inc., formerly the Specialty Phenolics division of Reichhold Chemical Company, announced an increase last month, before both phenol and phenolic resin increases were rescinde

POLYETHYLENE - Himont USA Inc. will raise selling prices for its lines of "UHMW" (ultra-high molecular weight) and "VHMW" (very high molecular weight) polyethylene by 5c. per pound effective December 1, the firm announced last week.

List prices for the polymers increased by the same amount on April 1. The list price for UHMW is now \$1.00 per pound.

The polymers are used in corrosion and abrasion-resistant applications requiring high strength and durability, such as truck bed liners, gear components and chemical

resistant pipes.
POLYSTYRENE — Huntsman Chemical Corporation will be implementing a second polystyrene resin price increase on December 1, the company announced last week, raising selling prices for crystal and impact grades of the resin by 3c. per pound, and those for ignition-retardant and pre-colored spe-

cialty grades by 2c. per pound.

The first round of polystyrene price increases, adopted throughout the industry, went into effect on October 1, boosting resin prices by 3c. per pound; higher styrene monomer costs were said to have catalyzed this primarily demand-driven increase.

When additional monomer increases were announced for November, American Petrofina Inc., a subsidiary of Oil & Chemical Company, reacted by announcing a second 3c. per-pound price hike for the polymer,

So far, Huntsman is the only other polystyrene producer to have picked up on this, although all makers of the resin describe both price increases as more than justified by strong demand and almost full capacity utilization, after years of depressed pricing and

PVC COMPOUNDS — Prices for BP Performance Polymes Inc.'s line of "Blanc" PVC compounds will go up 2.5c. per pound on November 15th, the company announced last

week. The new prices are said to reflect higher resin, plasticizer and lead stabilizer costs.

STYRENE-BUTADIENE LATEX — Responding to higher styrene monomer costs, the Emulsion Polymers Divison of Reichhold Chemicals Inc. plans to increase prices for its 'Tylac' styrene-butadiene paper coating latexes by 2c. per pound by November 1.

EPA Awards \$9MM Contract

ICF Incorporated, a Washington, D.C.-based consulting firm, says it has won the first major contract awarded by Environmental Protection Agency's newly created Office of Underground Storage Tanks (OUST). The contract — under which ICF will help this new office develop approaches for reducing the health and environmental risks posed by leaking underground tanks allows OUST to request more than \$9 million worth of work as needed over the next three

"Of the more than one million under-

ground tanks used to store chemicals and petroleum products in communities acres the United States, many are leaking and creating serious health and environmental risks," said James O. Edwards, ICF's chief risks," said James O. Edwards, ICF's clist executive officer. "ICF's task is to provide economic and analytical support to this reportion office as it develops, analyzes, and imply ments different approaches to control these

High-Solids More Effective Than Low Solids

High-solids urethane maintenance coatings can reduce application cost in to 3.4 cents a square foot and give beller results than their low-solids counterparts, according to a recently released Du Pont Company laboratory and field

"Given our findings, new and pendingsiale legislation mandating the use of high-wilds coatings to reduce emissions may prove boon to maintenance paint users," says Walter Kaminski, Du Pont's technical program manager in charge of the study.

"Although high-solids urethanes comma

up to a 30 percent unit price premium for the paint itself, they are highly cost effective when labor is considered. Our tests showed these coatings took 25 to 35 percent less time to cover test areas."

"The high-solids coating also showed significantly better performance than conver tional paints. For instance, it gave better hiding because of high film build, better elge protection because of lower shrinkage, and better appearance due to higher gloss."

VERTICAL PERFORMANCE The test found that painters can roll 5-ta 6-mil-thick applications (wet) of both high

and low solids coatings on a horizontal sr face. However, on a vertical surface, high solids still rolled 5 to 6 mils wet, where low-solids gave only 4 mils wet. The study compared the combined make rial and labor cost of high and low solls.

urethanes using roller, airless spray andcoventional spray methods. The results app cation by roller had a cost advantage dil cents; airless spray had an advantage of it cents; and conventional spray cost the ser for both coating types.

The study, which used "Imron" 333, 2 57 high-solids polyurethane maintenance ಣ ing, was conducted at Du Pont's Mark! Laboratory in Philadelphia and at refiner! and chemical plants in Houston and 🚳 stown, N.J.

"Given these findings, why havenly maintenance paint users adopted high technology? The answer is that without p ductivity tests, users cannot see past to 'sticker shock' associated with a \$75 galled paint," says Kaminski.



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Hercules Inc. Restructures Its Polypropylene Film Operation

pylene film business of Hercules Incorporaled, Wilmington, Del., designed to ocus services and marketing efforts on the needs of user industries rather than on the products it offers has been angounced by James E. Knox, president of Hercules Engineered & Fabricated

Products Company. The Film Group reorganization involves the formation of separate business units for the tobacco and snack food industries, for diversified industries which include bakery candy and industrial markets, and for the converter industry which serves end-users in both snack and diversified fields. Each unit reports to David B. Collins, vice president-

"A primary purpose of the reorgnaization is to give companies in important film-using

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A major restructuring of the polypro- industries their own Hercules teams who are familiar with their needs and committed to their interests," explained Mr. Collins. These responsibilities were previously spread among different groups when we were structured along product-directed

> Each of the new business units will have its own sales staff and responsibilities for product development and technical service for the industries it serves. From an internal standpoint, Mr. Collins said, they become separate profit centers and market-driven

> Heading the new business units are: Richard L. Johnson, director, tobacco industry: William B. Wagamon, director, snack food industry; Joel J. Roisman, manager, diversified industries; and Ralph H. Dale and Howard H., Taylor, managers, converter in-

Business manager for the Film Group is Richard H. Hough through whom report managers of international marketing and marketing communications.

The Hercules Film Group producers of oriented polypropylene films for a wide variety of packaging applications. Use areas include tobacco, snack foods, bakery products, candy, pharmaceuticals, personal care proucts and a number of industrial and overvrap applications.

Morton Thiokol Sees

Continued from Page 9

cated the company might make a large acquisition, but that its financial criteria are stringent. Morton-Thiokol would not accept the high prices and long-term dilution currently observable in the acquisition market. he said.

On the space shuttle program, he said the company has completed a preliminary re-design review with National Aeronautics and Space Administration and that redesign of the shuttle is proceeding (aster than expected. The shuttle should be back in space early in 1988, Mr. Locke indicated. Morton-Thiokol's aerospace sales, which were \$320 million in fiscal 1986, will decline to \$280 million in fiscal 1987 because of the standdown in the space shuttle program.

Mr. Locke noted that ample revenues and earnings will continue from Morton Thiokol's broad involvement in aerospace, which has included every single strategic missle program the US has ever had.

Another new area of interest is Morton-'hiokol's involvement in the automotive air bag programs being developed by most of the automolive companies, including the American and Japanese auto makers. The airbag has been made standard equipment for Mercedes cars produced in the US, Mr. Locke

In the specialty chemicals business, Morton Thiokol's packaging adhesive resins were reported to be doing exceptionally well. Sales of Adhesives, Coatings & Scalants are expected to grow to \$265 million in the current fiscal year from \$210 million in fiscal 1986.

The water-based polymer business which Morton Thiokol purchased from Monsanto Company about two years ago, is also performing very well, the analysts were told.

In the electronic chemicals business, Mr. Lockenoted signs of an upturn in the depressed US market for computers, and disclosed that Morton Thiokol and E.I. duPont de Nemours & Co. together have 90 percent of the photo resist market.

Avery Completes Purchase of Uniroyal

Avery Chemical, a subsidiary of Avery Inc., has completed the previously announced acquisition of Uniroyal Chemical Inc. (CMR, 5/10/86, page 9) for approximately \$700 million, the firm announced last

Uniroyal Chemical Inc., whose recorded sales totalled \$569 million last year, devel ops, makes and sells elastomers and spe-cialty chemicals worldwide:

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PERFUMES & FLAVORINGS

Orange Oil Market Unaffected By New Florida Citrus Canker

canker in a trailer park South of Bradenton Fla., last week caused a stir in the citrus industry. Fears that the damage done by a nursery infection in conjunction with a freeze two winters ago might be repeated were unfounded, however, as experts report only a minor infestation in Manatee County on the state's

"The strain-A citrus canker was first detected last June on Anna-Maria island and in a grove in Palmetto," says a scientist with the Division of Plant Industry in Winterhaven, Fla., "so the infestation we picked up last week didn't surprise us." He emphasizes that Manatee County is not part of the major citrus growing areas because of steady resi-

"The canker was probably there last Spring," concurs an industry observer. "But since they don't have the resources to go door to door, it's likely that other pockets of infestation will turn up in the near future."

Experts explain that the major vehicles for spreading the canker are lawn services which unknowingly work near infected trees. "The virus can be passed on by lawnmowers and equipment that have been used to tend contaminated areas; the clippings shorn on one property are used as mulch on another. Evidence for this has been in the location of the newly detected canker: ground level, or

REGULĂTIONS ADEQUATE Sources agree on the adequacy of state provisions for handling the potentially rumous virus. "The regulatory program that's in place is sufficient to prevent any further contamination," says one scientist.

Once an infected area is discovered, the allected trees are uprooted and removed in covered trucks to an incineration site. Unaffected trees in close proximity to the tainted ones are severely pruned, or "buckhorned," all the way back to the trunk and then sprayed with a copper sulphate-based solution that kills any remaining vitus.

The size of the citrus industry engenders a scare reaction when someone mentions canker," says a citrus grower, "but this has milored closely since it's been discov-

Another Florida citrus producer notes that market conditions are stagnant due to the eharvest timing: "The citrus market is not ibrant al this time of year; there's very liniited availability of the valencia or midseason

According to an essential oils broker, the

ESSENTIAL OIL IMPORTS: AUGUST

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azil to secure
Brazil has beolier since then. They
and are being
mer agrees:
nound
of part of the Florida market. "Brazil has become an important supplier since then. They have established themselves and are being aggressive." The Florida producer agrees: Midseason is 50 cents to 55 cents per pound f.o.b. Florida but Brazil undersells us at around 85 cents per kilo f.o.b. Brazil,"

Other oils, an essential oils importer says, don't compete for the same volume market

PRICES TRENDLINES

WEEK ENDING OCT, 31, 1986

CHANGES/UP

Anise seed, Spanish, 2c, per ib.
Anise seed, Turkish recleaned, 8c, per ib.
Bergamot oli, Italian, 50c, per kilo
Cumin seed, Turkish, 3c, per ib.
Fennel seed, Indian, 5-8c, per ib.
Ginger oot, Chinese, 2-4c, per ib.
Jergan Oli, Italian, 40, 50c, establic Lemon oli, italian. 40-50c. perkilo Ocotea Cymbarum oli, 15c. perkilo Sesame seed, Central American, 1c. per l Turmeric, Alleppey FAQ 3.00%, 2c. per lb.

CHANGES/DOWN

Basil leaves, Egyptien fancy, 5c. per ib. Camphor oil, 1.070, 5c. epr ib. Cinnamon, Mexican, 3" cut, 35c. per ib.

PERFUMES INDEX

The Perfumes & Flavorings index reflects the prices of 11 representative materials in this sector and the quantity of each supplied in 1985.

Oct. 31, 1986	71.00
Oct. 24, 1986	71.00
Sept. 26, 1986	71.00
Nov. 1, 1985	71.00

Chemical Prices Start on Page 48

with the Brazilian and Floridian because they're more specialized products. "The Callfornian oil doesn't compete head to head with the others because producers there claim higher distillation and recovery costs." Isracli orange oil is also specialized and, though prices for it in the US have dropped 15 cents on a cost and freight New York basis to 72 cents per pound, it is available in such limited quantities that bulk purchasers look elsewhere for their oil.

ESSENTIAL OILS

OCOTEA CYMBARUM - Brazilian ocotea cymbarum firmed last week from \$5 per kilo f.o.b. Brazil to \$5.15 to \$5.20 per kilo Continued on Page 65

97,349 20,275 131,739 7,565 290,423 37 66,357 25,583 12,085 1,527 2,759 894 22,087

YR TO DATE
72,982
8,413
15,432
296,971
7,978
15,820
52,742
26,632
916,429
95,556
901,994
79,982
162,782
442,506
83,033
80,957
98,443
22,670

1,332,040 86,755 904,678 9,678 224,111 6,189,118 78,245 196,083 21,778 68,650 38,831 27,076 19,085 35,777 61,360

155,007 18,000 150,963 8,614 559,482 26 33,674 1,190 33,852 9,976 16,868 5,615 26,984 5,724

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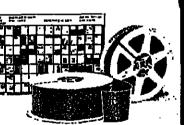
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CHEMICAL MARKETING REPORTER

CHEMICAL MARKETING REPORTER

November 3, 1986

CHEMICAL PRICES

WEEK ENDING OCT 31, 1986

This chemical prices section contains spot quotations and/or list prices of suppliers of chemicals and related materials on a New York or other indicated basis. The listings are based on price information obtained from suppliers. Note that posted prices do not necessarily represent levels at which transactions actually may have occurred. They do not represent bid and asked prices, nor a range of prices over the week. Price ranges may represent quotations of different suppliers as well as differences in quantity, quality and location. All matters under this heading are fully covered by copyright.

An index of weekly chemical market reports is on the back cover.

			Alumina, activated, gran., 100-lb, bgs.,		
			40,000-lb. min. c.l., works. ton	821.00 -	
Л			calcined, bulk, same basis ton 100-ib. bgs., same basis ton	354.00 - 380.00 -	
			hydrated, white, bulk, same ba-		
			sis 10n	190.00 - 224.00 -	
		البطنالات	100-lb. bgs., same basis ton Atuminum acetate, basic, dms , t.c.i.,	E27.W ~	
bies alba, dmskdo		27.00	workslb.	3.25 -	
cetaldehyde, 99%, tanks, frt. alid. lb.	.37	-	Aluminum chloride, anhyd., soln., 500-		
Prices 1c higher in West. cetaminophen (see N-Acetyt-p-ammophe	noi)		600 lb. dms., c.l., t.l., works, trt. equald	.53	
colamilide, tech, flaked, bgs, t.l., f.o.b.	_		bulk, semo basis	.48 —	
works	1.29 .25	-	semi-bulk bins, same basis lb. Aluminum chloride, comi., scin., 32°	.52	
cobc acid, tech , tanks, divd. E ib. cotic anhydride, tanks, divd. E ib	43/2	_	Lanks, works 100 bs.	15.00 ~	
Acetic anhydride prices 1c higher in We	st.	_	ret. dms., c.l., works 100 lbs.	12.00 -	
otoacotaniide dms , t.l., divd ib. cetoacet-o-anialdide, dms., t.l.,	1.29	-	non-ret. dms., same basis . 100 lbs. : Aluminum formate, dibasic, 19. 6%	20.00 -	
divd iib.	2.70	-	Al ₂ O ₂ t I., works b.	55 -	
cetoacet-o-chloroaniirde, dms., t.l.,	9 46	_	Aluminum hydrate (see Alumina, hydrate	d)	
cetoacet-o-toluidide, dms., t.i.,	2.65	-	Aluminum hydroxide, dried, gel, NF, 75-lb. dms., c.l., t.l., works. ib.	2.75 3.50	J
divd ib	1.58	-	Aluminum metal, 99 1/2% or more, 50-lb.	2 4.00	
etoscet-m-xylidide, dms., t.l.,	2 22	_	pigs., 30,000-lb. lots, frt.	70	
divid	3.33 .25	_	alidib. Aluminum oxida amorphous (see Alumin	.76 - a, calched).	
divd Zono 2 (Cnit.) 1b.	.27	-	Aluminum paste, lealing grade.		
divid Zone 3 (W of Rockles exclud-	.27	_	std.,lining, 2,400 lb. lots,	1.40 -	
ing Calif.)	.53	54Vz	lining, extra-line, same basis lb.	1.99 2.14	4
gtophenetidn (see Phenecetin).	-	_	Aluminum phenolsulfonate, purif, 100-		
elophenone, tech., tanks, 10.b worksb	.76	.85	klio dms., t l	646 -	
perfume grade, extra, cns lb.	2.15	-	Aluminum powder, leafing grade, std. (ining, 2,400 lb. lots, divd lb.	3.17 -	
Acetyl-p-ammophenol, c.l., t.l.		6.04	extra fine, lining, same basis ib.	4.04 -	a
works. kilo cetylone black, imp. 50% com-	5.95	6.64	Aluminum stearate, bgs., c.l ib. Aluminum suifate, comi., grd., 100 ib.	1.25 1.36	ď
pressed, 1212-lb bgs. c1, t1.			bas., c.l., works, irt, equald		
frt. extralb	.96	-	basis 17% Al ₂ O ₃ East and Gulf	30E 00	
100°s, 25-lb bgs., same ba- sisib	.9512	_	Coastston	205.00 ~ 220.80 ~	
kcetylene tetrabromide, tanks, f.o.b			liq., tanks, N.E. same basis ton	145.00 -	
works tretvisalicylic acid. USP (see Asonn)	.97	-	Iron-free, dry, bgs., c.l. same	300.00 -	
cety/salicytic acid. USP (see Aspann) cety/inbutyl carele, bulk, l.o.b			basiston	225.00 265.0	ж
works	1.28	-	Auminum suifate, USP, gran., dms. lb. Aminoacatic add, USP, dms., 20,000	337	-
cetyltriethyl citrate, bulk, flo.b. worksb	2 06	_	Aminoacetic add, USP, dms., 20,000	2.12 -	
Acrolein, tech , tanks, works lb.	.62	_	ibs "f.o.b. worksib. tech., t.l., same basisib.	2.12 - 1.88 -	
korytamide, solid, t.l. works	1.00	_ .77	p-Aminobenzoic acid, 1,000 kilos or		••
soln., 100% basis tanka, worksfb. Acrylic acid, glacial, reg., tanks,	.74		rnore, dms., f.o.b. works . kilo 2-Amino-4-chlorophanol dry and grd.,	9.60 10.1	10
dPvd	67	-	14,000 lbs. or more, frt. alid. lb.	5.79	,
tech tanks in aid ib. crylonimie tanks works ib.	.60 .3915	_ .45*	Aminoethyl ethanolamine, tanka, frt.		
crylonitrie-butatiene-styrene resin.	.0012	.TUV	collect	1.331/2 -	
high-impact, nat., Lf., dms.,			frt. collect. , ib.	1.05 -	
modium-impact, nat , same basis ib.	1.09 1.05	1.12 1.08	2-Amino-2-ethyl-1,3-propanediol	1 00	
low impact, nat , same basis ib	.98	1.01	dms.,tJ. f.o.b. worksb.	1.82 -	•
Adapic acid, restri grade, bulk, hopper cars, int equald ib.	.57	_			-
bos., t l., c l. fri. equald ib.	.59	_			_
Agar USP. powd., 60 to 100 mesh.,	0.50	0.00			ı
drns	9.50	9.85	ADDT		ı
workslb.	.38				
C-12 to C-13, tanks, clvd lb C-14 to C-15, tanks, clvd lb.	.57 57	.59`			j
C-14 to C-15, tanks, divd lb.	.57 .60	=		-	ı
Aldehyde, C-6, dms	4.10	5.70	THE TERMINOLOGY	OF THE CL	먇
C-7, dms	1.95 4,30	6.30	11	<u> </u>	
C-10 dms	4.30	5.35	a/alpha C.	/Centigrade	
Alg:n (seg Sodium alginate)			alio/allowed cp	ya./carboya	
Alkali blue, dry, flushed, 110-lb. dms, divd	3.72	3.63	amorph./amorphous	cubic centimet	en
Alkas blue prices 1c. higher W. of	G.FE	0.03	I i point)/completely den- atured	•
Rockies.				.f./costingurance	B
Allspice Gustemalan / Honduran, bgsb.	.87	_	ACAC/ASSOCIATION OF	freight	
Jamaican, bgs	1.05	-	Chemists ::	l./carload 18./cans	
Allyl alcohol, lanks, f.o.b., Bayport, Tex	.90	_	i a bravia analogo bugo. Co	omi./commercial	
Afyl bromide, 500-lulo dms. 2,000 lbs.		-	approx./approximately	onc./concentrated p/chemically pure	đ
or more, works lb.	5.50		artificial c	ps./centipolses	•
Aliyi caproate, 25-lb. cns lb. Aliyi chlorido, tariks, f.o b. works lb.	3.90 .65	4.50	obulot Toollan & Ci	ryst./crystalline	
Allyl (sothiocyanate, bots R).	5.40	6.90	II Materiala	s./cases ins./carions	
Almond oil, and, bitter (see Benzaldeh				yla./cylinders	
Almond oil, nat bitter, NF 1.1.p.a.	3.50	3.60	b/bets		
DOIS	1.24	1.50	Bo/Baume d	-/dextro	
botsb. sweetb.		_	bbls/barels d	bi./double	
Aloe, Cape, cs b.		2.75	bgs/bags d	enat./denatured estdist/destruc	
sweet	2.25		· · · · · · · · · · · · · · · · · · ·		
sweet fb Aloe, Cape, cs. b powd, cs. b Curacao, kgs. b powd, kgs. b	2.25 2.60 3.00	=	1 218-129-08	n very distribed	•
Sweet	2.25 2.60 3.00 6.00		bots/bottles	ti yely distilled II/dextro-leavo	•
Sweet	2.25 2.60 3.00 6.00	=	b.p./boiling point b.p./boiling point b.p.l./bone phosphate	Tively distilled ii/dextro-leevo list./distilled listr./distributor	•
sweet	2.25 2.60 3.00 6.00 35.00 55.00	=	bots/bottles b.p./bottles b.p.l./bone phosphate of lime	Tively distilled il/dextro-leavo list./distilled fistr./distributor livd./delivered	•
sweet	2.25 2.60 3.00 6.00 35.00 55.00	=	b.p./boiling point b.p./boiling point b.p./bone phosphate of line b.r./boiling range	Tively distilled ii/dextro-leevo list./distilled listr./distributor	•

7	dms., c.l., t.l., f.o.b. works . lb. tanks, f.o.b. works	.89 .88	-	Tulmon, ugo	1.10 1.08	1 13
ı	. A. Aminochhendi, dMS., T.Q.O. CRUTULLO,	3.95	_	o-Anisidine, imp., dms., divd.	4.80	5.4g
М	N.C			p-Anisidine, Imp., cast solid, dms. workslb	2.27	•
	Paleigh, N.C. kilo p-Aminosalicylic acid, USP, 50-kilo	7.15	-	fiakės, same basis	1.90 2.25	-
		18.50	-	Anthranic acid, purif., 99% min., dma. t.i., frt. alid	1.70	-
7	Ammonia, anhyd., fartii)zer, wholesiid.			Antimony fluoborate, liq. conc., 175-lb, dms., t.l., worksb.		•
4	nelston	165.00 80.00	170.00 85.00	Antimony metal. bulk, c.t., mines, b	3.02 1.35	1.89
ŀ	tankcars, f.o.b. Gulf Coast ton aqueous, 29.4% NH ₃ , anhyd. basis,	00.00	30.30	Antimony oxide, high-tint, bgs., c.l., frt. alid. E. of Rockles		-
	ianks, frt. equald. E. of Hock-	260.00	315.00	Antimony trichloride, anhyd., solid.	1.35	1.50
ı	Ammoniscal liquor (see Ammonis, squed		ì	dms., t.l. worksb. Apomorphine hydrochloride, NF, bots.,	3.60	•
1	Ammoniac sai galvanizing grade, bgs., c.i., f.o.b. works 100lbs	28.60	- 1		15.00	-
1	i Ammoniac sai, white (see Ammonium chi	aride comi	.).	Arabic gum, powd., bbis,	2.05 1.85	215
1	Ammonium biborate, gran., dms., c.l. worksb.	.90	- 1	spray dried b. USP grade	2.00 6.75	250
	Ammonium biborate powder 15c. per lo Ammonium bicarbonate, 300-lb. filo.	higher.	1	Aromatic petroleum solvents (see 5 petroleum, eromatic).	olvent.	Datepii
1	I rimsc.i., works 100 IDS.	26.00	-	Arsenic, crude (see Arsenkous trioxide).		
ı	bgs., c.l. 100 lbs. Ammonium bichromate, photo-litho	25.00	-	Arylid, red (see Napthol, arylid red). Arsenious trioxide, 98%, bulk, c.i.,		
ı	grade, gran. 100-lb. dms., i.t.i.	2.00	_	f.o.b. warehouselb. Asbestine (see Talc, fibrous).	.42	45
	Ammonium bifluoride, bgs., t.l.,			Ascorbic acid, USP, 100 kilos,		
1	works	.70	-	divdklig. Ash, black (see Barium suifide).	9.00	10 50
_	dms., c.l., t.l., f.o.b, works . to.	1.31	-	Asphalt gilsonite, (see Gilsonite).		
	Ammonium chioride, white, tech., fine gran., bgs., c.l			Asphalt petroleum cutback, tanks, E. Coast	.86	
	works100lbs.	18.00	- .53	emulsion, tanks, tankwagons, E. Coastgal,	.68	
	USP, gran., dms	.40	.ÇG	steam-refined, 40-300 penetration,		·
	dms. f.o.b. works lb.	2.79	-	steeproofing grade, bulk tankwag-	170.00	•
	Ammonium dimolybdate, approx. 85%, 24,000 lbs. or more . lb.	5.48	-	Aspirin, USP, cryst., powd., 250-	175.00	•
	Ammonium fluoborate, tech., dms., c.i., t.l., works, int. equald lb.	1.79	_	lb.dms., c.l., f.o.b	1.95	-
	Ammonium hantamolybdate, cryst.,			10% starch granulation, white, 250- lb. dm, c.l., f.o.b lb.	1.97	
	dms., 24,000 lbs. 1.ó.b. workslb.	5.57	-	16% starch granulation, white, same	2.80	_
	Ammonium lauryi sulfate, tanks, f.o.b.	.29	.32	Freight equald, shipt, identical quantity	over star	ndavd (
	works		.02	from N.Y., Phila., Midland, Mk	en., Chica	ago an
	f.o.b. Roquiem, Ore ton Ammonium nitrate, dom., fertilizer	72.00	-	Atropine sulfate, USP, botsoz.	10.00 4.00	11(
	grade, 33.5% N, bulk, 8.E.	180.00	125.00	Avocado oll, dms		•
	divd ton Ammonium oxaliste, tech., fine. gran.	130.00	135.00	divd	1.23 4.60	
	300-lb. dms., t.l., f.o.b.	1.42	1.68	Azo yellow, 10 G, bgs., divd. E. ol		
	works		1.00	Azo G vellow pigment, bgs., same ba-	4.40	
50	C.I., works	.75	-	5iS ib.	2.45	
	per ib. higher.					
•	Ammonium persulfate, 225-lb. dms, 24,000 lbs. or more, f.o.b.					
	workslb. 55-lb. bgs., same basislb.	.58 .589	- -			
	Ammonium phosphate (see Di- and					
14	phates). Ammonium sticofluoride, dms. c.i., t.i.,					
	. workslb.	.301	4 -	Backracin, USP, non-sterile, one biller	6.30	
-	Ammonium suifate, ig. gran., buik, c.i., workston	80.00	90.00	units or more million units Barbital NF, 50-kilo dms., divd kilo	22.50	
36	etd., comt., bulk, f.o.b. works ton tech., bgs., c.t., t.t., works ton		70.00 120.00	Barbital-sodium, NF, 50-kilo dms.	23.00	ı
00	Ammonium sulfide, liq., 40-44% tanks			Barite, dry-grd., Southern, off-color.	.09	
	100% basis, frt. equaldton Ammonium sulfocyanide, tech. (see A		thlocyanate).	coarse, bgs., c.l., f.o b mines b. water-grd., white, bgs., c.l.,	-	
-	Ammonium thiocyanate, tech., cryst. bgs.,c,l., worksb			f o.b. works	.13	1
_	tech soln., 50%, tanks, fri		_	unbleached, extra-fine, pigment grade, c.l., f.o.b. works ton	160 00)
-	equaldbb equald		-	Barium carbonate, precip., bulk, c.l., works, frt. equald lb.	.25	
.00	60%, tanks, f.o.b. works lb	13	-	bos., same basis lb.		51 7 0
	Ammonium zirconyl carbonale, soin.	72	_	photo grade, bgs., same basis ton Barium chlorate, 100-lb, dms., 1-10	_	
_	Armyl acetate, primary mixed isomera tanks, divd			dm. lots, worksb. Barium chloride, tech., cryst., bgs., cl.,	1.04	_
	Arnyl alcohol, primary mixed isomers	1,		works	470.00 590.00	
.10	tanks, frt, alld			anhyd, drums c.l., same basis ton Barium chloride, purif., cyrst. 400-b.		
-	p-tert-Amylphanol, bulk, works (b	91	1.03	dmg. works		D
-	Amyris oil, dms	o 10.20	-	Barium monohydrate, 55-lb. bgs. c.l. t.l. f.o.b. works 100 lbs.		D
_	USP, dms			octahydrate, cryst., Dgs., same	33.0	0
_	Aniline, tanka, f.o.b	o33	.351/2	Regium plicate, 100-16, 008-, 14-		0
_	1 Anise oil, dimskii	o 8.90		works100 lbs		_
						_

nise seed, Chingse, bas

THE TERMINOLOGY OF THE CHEMICAL MARKETPLACE e.p./end point equald./equalize exp./expressed extr./extracted

F./Fahrenheit 1.s.s./free slongelde ferment./fermentation 1.f.s./free fatty acid 1.f.c./free frem chlorine

l-/laevo ib./pound i.o.l../less carload i.t.l./less truckload iiq./liquid

kgs./kegs

NOTE: A unit-ton is 1 percent of 2,000 pounds of the basic constituent or oth percentage figure of the basic constituent multiplied by the unit-ton price Reporter gives the price of 2,000 pounds of the meterial:

e. bgs b. 1.30	Barium oxids, Grd., dms., c.l.,	21.05		Borr
	give beels 100 lbs.	31.25 30.00	-	te
ms. divd. b. 2.27 5.46 cast solid, dms.	Barum peroxide, 700-lb. drns., c.l., t.l., works	.30	-	"
sis b. 1.90	dest.	1,05 unc fixe).	-	Bora Bori
inff., 99% min., dma., 1	Barum suffere, USP, Ariay dags	.5814	_	Boro
works	10,000 kilo lota ib. Sarum suffide (black ash), dims., c.l., works	.5672 480.0D	-	Boro
Ign-unt, bgs., c.t., frt. Rockles	Basi Egyptan	.67 .88	.90 90	bu
ride, anhyd., solid, worksb. 3.60 ochloride, NF, bots	Basici, Comores	55.00 62.00	-	Boro
dms	Bettery 200, 13., 1.0.0., Works	52.00	70.75	Bron
1., bbls	879-88% Al ₂ O ₃ , Baftimore & Moblemetric-ton Bayol NF, 50-55%, dmsb.	229.28 11.00	-	_ bu
leum solvents (see Solvent, paphy, n, eromatic).	Baybarywax, ogs	2.70	3.00	Bron
e Arsenkous trioxide). apthol, arylid red).	bricks, 100-lb, ctns lb.	3.10 3.05	3.20 3.10	Bron
de, 99%, bulk, c.l., rehouselb, .42 45 lc, fibrous).	yelow bricks, 100-lb. ctns lb. yelow, slabs, 100-lb. ctns lb. gentonite, dom., c.l. bags, f.o.b.	3.00 2.95	3.10 3.05	Bute
, USP, 100 kilos, klo. 9.00 1040	works	43.50 1.25	-	1.4-
arium sulfide). (See Olisonite),	rech., drifs., c.L., t.l.,	.73	.83	Bute n-Bu
m culback, lanks, E. gal86 ks. lankwagons, E.	the Rockles. Benzere, indust. or nitration, barges, f.c			n-Bu
gal, .68 - 40-300 penetration,	Baton Rouge, La	.87 .67 .87	-	BOC-
nkwagonton 170.00 - rade, bulk tankwag-	Carlettsburg, Ky gal. Cricago district gal.	.85 .87	-	Buty
	Chocolate Bayou, Texga). Clurton, Pagal.	.87 .87	=	Buty
enulation, white, 250- .l., f.o.b	Corpus Christi, Tex gal. Deer Park, Tex gal Houston district, spot gal.	.87 .87 .85	- .87	Buty Buty
anulation, white, same	Lima, Ohio	.90 .87	-	n-Bu
Y., Phila., Midland, Mich., Chicago and 9	Barzenehezeoloride, 99% yamma iso Barzeneorange, powd., bgs.,dlvd.lb.	4.90	8.70	n-Bu
USP, botsoz. 10.00 1100	šą comininers, cflvd lb. Benzidne yellow, AAA, bgs., dlvd fb. AAOA, bgs., dlvd lb.	3.36 5.80 7.35	3.89 6.05 7.40	n-Bu
h.,50-lb bgs.,t1.,c.l., 	AAOT, bgs., divd	5.95	6.20	tar
G, bgs., divd. E. ol	f.o.b.,works kg. Banzodhydropyrone, dma Ib.	10.00 12.50	11.60	But
ment bgs same ba- lb. 2.45 -	Banzac and, tech., bgs., c.l., (.l., f.o.b. works	.55	.58	Buty
	Benzongum, Sumatra, cs	1.73 1.80	1.75	Buly tar p-ter
	more (a.b	3.50	3.60	Buty
	WF 1,000 kilos or more, f.o.b. kg. tech. 1,000 kilos or more, f.o.b works kgs.	7.45 4.35	_	Buty
, non-stenie, one billen	 Senzomazyi disulfide (see Merca) fidel. 	olobenzothia	azyl disul-	Buty
-more million units 6.30 to 1.4 - 1.4 - 1.4 - 1.5	Bevecinazola, liake, dms., 1,000 lbs. ormore, f.o.b. works lb.	6.10	_	tert-f
m, NF, 50-kilo dms. kilo 23.00 -	poid, dms., 1,000 lbs. or more, same basts	6.20	-	Buty
rd. white, bas, c1.	mora, same basia lb. Berootrotionde, reid., dms. t l. (ct	9.90	-	Butyl
vorks	eopald ib. tanks in equald ib. deviolationide dima. c.l., works ib.	.87 .80	-	1.3-E Buly
ate, precip., bulk, c.l.,	Banzoni peroxide, requier grap	.57 .74 <i>V</i> 2	.59 .75	Buty
me basis	With fit agualst	2.35	6.98	Buty n-Bu tar
le, 100-lb, dms., 1-10 ls, works lb. 1.04 - ls, toch , cryst., bgs , c.l	paste 50°s and 55% formulations, dns. pals, frt. equald. Ib. Eenzylacetate dns. Ib. Benzyl alcohol. N. E.	1.71	1.95	
ims c L. same basis ton 590.00	count	1.20 1.26	2.60 1.85	
e, purif., cyrst. 400-lb. 3.76	prote grade, 1.L. dries serve be	1.37	1.43	
ydrate, 55-lb. bgs., c.l., b. works 100 lbs. 46.00 tte, cryst., bgs., same	lands, same basis	1.40 1.34	Ξ.	
e, 100 lb. 33.00 e, 100 lb. bgs. 1.l. 32.50	Bench benzouto elemen	1.32 1.26 1.65	- 2.25	Cadr
100 lbs. 02.00	interior in the constant in th	.59	-	Cadr
	"Benzyl-N.N-dimethylamine, t !	.54 8.50	9.95	ligi me
	6-ten Russa dms. Ib.	2.30 10.50	-	Cadr
	British providency, drms	10.00	· _	\
	edime acelone, cns., bots. in	3.35 2.90 2.95	3.25 3.25	Cadr
***************************************	1.0 cve 500 Hitoic acid (see b-Oxyn	44.75 aphthoic acl	d).	Cadr
secs./seconds sp.g./specific gravity ship't/shipment	E multi mitrate purif. cryst 100	5.50	-	
soln./solulon	our oxychioride, 100-ib, done	10.00	-	Cadr
syn./synoneuc	Washingtonate USD modbers	17.20	_	Cadr
hig tert /tertian/	Powd, 225-Ib dms, works. Ib. Struith subpallate, purit., 100-lb. Earth submirate NF, powd., 200-lb. dmg, works.	15.31 10.50	15.50	
t.i./trucklose ton/refers to short len	SUBSALCVIATE DUTY	14.45	_	Cadr
TVA/temporary volun-	E-un books dos works b	17.00	_	iigi me
t.w./tankwago	Esphenol A epoxy grade become	15.00	15.45	me
i USP/United States Pharmacopals	By 199 Sm. mp. hame basis lb.	.67 .71	-	Cadn
vis./viscosity vM&P/vamish makets	inner fied (8) dres ib.	.20 6.75	-	Cadr
a penner	Bonemeal Steament basis Ib	7.25 6.50	8.05 7.90	Caffe
whee/white	Process phosphers delluorinated of Ilm	180.00 e (sae Deil	190.00 Lorinated	im
nt or other stendard of the material to price shown in Charling Markets.	anwa 989	108phate trit	oasic).	Cala
n price anown	wates you 98% bgs. c.l., ball cl., works ton	647.00 602.00	_	Calci
المعروب المرازي الراقي والمرازية				

•	(1. works	je digita		bulk, of works. bgs., of works. Noverhise 5,1985		CHEMI
) 	Calamus oil, dins. Calciferol, (see Ergocalciferol). Calciferol, (see Ergocalciferol). Calciferol, (see Ergocalciferol).	26.60	35.00	Light about the HAP chirth alrushing	:2300	
00 nated	imp., cryst., anhyd., powd., dms., 10,000 lbs. or morelb. Calamine, USP, dmslb:	4.70 1.50	4.85 1.70	general purpose (GPF), bulk, o.l., works	2075 2375	. - .
25 30	Caffeine, dom., USP, syn. cryst. an- hyd., powd., 100-b. dma., c.l., t.l., frt. alfdb.	4.80		(FEF), bulk, c.1, works	.2125 2426	.=.
	shades, bots., same casislo. Cadmium suffate, 50-lb. dms., any quantity, f.o.b, ship. pt lb.	2.97 4.05	3.00	Caraway oil, Poland, dms	22.00 .58 .80	25.00 .59 .53
45	medium shade, bbis., same basis.ib. marcon shade, bbis., same basis.ib. Cadmium-salenide kithopone, yellow, all	6.37 7.47	8.40	NF, from African pepper, dms. 500,000 pungency	8.00 17.00	18.00
.	iight shade, bbis., same basisfb. madium light shade, bbis., same ba- ais	5.27 5.72	5.30 5.75	Capsicum off (see Capsicum ofeoresin). Capsicum ofeoresin, NF, from dom, pepper, dma	11.00	-
	deep shade, bbls., same basis lb. Cadmium-selenide lithopone, red, dark shade, bbls., same basis B.	4.47 6.77	4.50 6.80	f.o.b. works	.35 .7314	=
50	Cadmium-selenide-lithopone, orange, light shade, bbis., 400-lb. tote. [rt. alid. E. of Rockies lb.	3.97	4.00	f.o.b. shipping point b. moiten, lanks, sante basis, ib. Capryl alcohol sec. 92-99% tanks,	.87 .85	= .
	lote, cs., divd	1.20 2.10	1.50 -	Capric aldehyde (aldehyde C-10) dms., cns	3.95	5.35
.	shade, bbis., irt. alid. E. of Rockiesb. Cadmium metal ingots or slicks, ton	4.60	· -	refd. pure, bgs	2.10 .80 .60	- .65 .65
25	medium-light shade, bbis., same ba- sisb. Cadmium-mercury lithopone, maroon	3.22	-	spec. grev., 1.070, dms fb. Cananga oli, indonesian, dms kilo Candelila wax, crude, bgs lb.	2.65 17.60 1.90	2.85 _ _
25	Rockies	6.10 2.27	7.07	ib. tots or more	3.50 1.66 2.00	=
	medium-right shade, obis., same ba- sis	10.28	14.50	USP, powd., 165-b. dms., 5,000 lb. lots or marelb. syn., refd., 1-oz. tablets, otns. 1,000-	2.36	-
95	Rockies ib. light shado, bbls., same basis ib. medium shade, bbls., same basis.ib. medium-light shade, bbls., same ba-	9.16 10.69	12.06 15.20	kgs	3.63 1.80	3.70 _
25	lb. dms., t.i., workslb. Cadmium, CP, red, dark shade, bbls., 100-lb. lots, frt. alid., E. of Ronkies	3.73	16.35	f.o.b. worksb. Camphene chorinated, 67-69% (see To Camphor, monobromated, dms.,	8.50 xaphena).	-
	Cadmium chloride, purif. cryst., 100-	370	_	works	.07 stonite).	-
íš				Calcium propionate, dms., 2,000 lbs. or more f.o.b. frt. alid lb. Calcium silicate, hydrated, bgs., c.l.,	.50	.55
30 86				sis	54.95 62.50	-
96 95	n-Butyron(trie, dms., c.l., divd ib. tanks, divd ib.	.93 .54		bgs., c.l., t.l., works, frt. equald 100 lbs. anhyd., food grade, same ba-	50.50	-
75	Butyric acid, tanks, frt. alid	.44% 1.20	<u>-</u>	dentifice grade, same basis60 fbs. Calcium phosphate, monopasic, monohydrate, food grade,	49.90	-
59	tech , 5gs., c.l., t.l., dvd lb. 1.3-Butylene glycol, tanks, dvd lb. Butyraldenyde, tanks, dvd lb. Butyraldenyde, tanks, dvd lb.	1.24 .72 .29%		USP, bgs., c.l., t.l., works, frt. equald	62.50 71.75	-
	dmsdivd	8.80 1.24	8.85 1.30	grade, 184% P. bulk, c.f., t.f., f.o.b. works ton Caldium phosphate, dibasic, dihydrate,	228.00	-
	works	1.31 1.17	-	grams per lb., f.o.b., frt, alid., 500 lbs or more lb. Calclum phosphate, dibasic, feed	2.76	-
disul-	tanks ib. Butylamine (see Mono-,Di- and Tributylatert-Butylamine, dms., c.i., t.i., f.o.b.	•	.58	di-Calcium pantothenate, calcium chlo- ride complex, feed grade, 160	8.00	8.50
elia : -1	tanks	.92 .60	62	di-Calcium pantothenate, feed grade, 1.o.b. frt. alid., 250 kilos or more kilo		
BO .	p-tert-Butylphanol, tanks works Ib Butyl phthalate (see Dibutyl phthalate). Butyl stearate cosmetic, dms., 77 dms. or more	.70 .91	- .97	f.o.b. plant, E. of Rockies ib. d-Calcium pantothenate, USP, 100- 500-kilo lots kilo	.85 11.50	- 12.50
75	Butyl obate, dist., dms., c.i. b. tanks. b.	.40 .70 .80	.42 .82 .75	special gran , dried grade, same ba- sis	2 60	-
58	Butyl methacrylate, tanks, frt. equaldb. Butyl octyl phthalate, tanks, divd.	.88	-	drate, dms., 24,000 lbs. or more, f.o.b. works lb. NF, gran., tnhydrate, same basis. lb.	2.00 2.10	-
20 60	tanks, 3,000-lb. min., 100% basis,	15.45 14.75	-	works kilo Calcium lactate, NF, powd., pentahy-	23.65	25.65
89 05 40	n-Butylikhium, 15% soln., 1,000-lb. lots or more cyls., 100%, basis, divd		•	Calcium lodate, FCC dms., f.o.b. works	5.50	-
70	Butyl Isodecyl phihalate, tanks, dwd	1.85 .35 1.58	- -	les	92.40 13.75	- 14.50
67	Butyl cyclohexyl phinelete, tanks, divd	.99 .74	1.00	1,000-ib. lots. worksb. Calcium hypochlorite, 100-ib. dms., truckloads ship,t. E. of Rock-	10.50	13.25
	Butyl benzyl phthalata, tanks, fritalid	.59	-	dms., works	400.00 1.80	450.00 -
	teri-Butyl alcohol, syn., tanka, divd. Ib. Eb. Butyl alchyde (see Butyraidehyde)	.365 .70	-	10,000 lbs. or more, f.o.b. workslb. Calcium cyanamide, indust., anhyd.	3.82	-
	n-Butyl sicohol, syn., ferment, tanks, frt. sild	.69 .34	~	dms., t.i., frt. equald lb. Calcium citrate, purif., 200-lb. dms.,	.90	-
83	Butene-1, tanks, f.o.b. works	.88 .26 .5272		sis, t.c., t.t., barge ton	99.75 118.00	-
	1.4-Butanedioi, tanks, i.o.b., irt. aqualdib. dms., same basisib.	.80	_	80-lb. bgs., c.l., same basis ton brining grade, 80-lb. bags ton Calcium chloride, liq., 100 percent ba-	217.00 279.00 285.00	=
10 05	Bromochloromethans, dms., c.l., f.o.b. Midland	1.12 .12%	12	Dasis	198.00 217.00	-
20 10	higher for 30,000-lb, min, gr higher for 15,000-lb, min, gr	יאו או פפי	المحمد عملا	80%, flake, bulk, c.l., workston 100-b. bgs., c.l. same	153.00	-
- 00	bulk, 45,000-lb, min., works lb, purif., t.l., divd lb. Bromine divd., orices for drus, and buik	.33 .75 ebinned W	.34½ of Rockies.	Calcium chloride, conc., reg. grade, 77-	217.00	225.00
75	phenolate, 500-lib. dms., t.l., same basis	1.65 .87	-	precip. danse. bgs., c.t., surface treated, bgs., c.t., works ton ultrafine. USP, bgs	265.00	-
-	Boron trifluoride, etherate, 500-tb,	3.47 2.35	- -	Calcium carbonate precip. medium,	385.00 110.00	445.00 150.00
- 90 90	Boron trifluoride, 60-lb. cyls., t.l., i.o.b. works. lb. bulk, same basis b.	3.80 4.03	-	Calcium carbonate, coated, bgs., c.l., works ib. Calcium carbonate, precip., bgs.,	.0830	.1600
-	C.I., works	614.00 569.00	Ξ	72% solids, same basis ton quicklime, gran., ind., bulk, work- s	109.27 100.93	-
-	Boric acid, tech., gran., 99,9%, hos.	220.00	-	basiston	46.00 97.00	100.00
-	tech., pentahydrale, gran. 991/2%, bgs., c.l., works ton bulk, c.l., works ton	192.00 265.00	-	Calcium carbonate, pulverized, 325- mesh, bgs., bulk, f.o.b. workston		-
-	Borax, tech., gran., decahydrate, 99½% bga.,cl., works ton bulk, cl., works ton	237.00	_	Calcium carbide, std., generator size, bulk, c.i., f.o.b., works, ton	402.00	······
	فيهرون والمتالي والمتالية المتالية					

WEEK ENDING OCT 31: 1986

Carbon Black, low structure, bulk, c.i. 4050

Carbon Black, low structure, bulk, c.l. works. b.
bags.c.l. works. b.
lnter mediate-super-a brasion
(ISAF). b.
bgs.c.l. works. b.
carbon black, thermal medium, bgs.c.l. works. b.
carbon black, thermal medium, bgs.c.l. works. b.
carbon black, thermal medium, bgs.c.l. works. b.
carbon black of barge, (o.b. Guill refineries bbls.
carbon disultide, t.c., I.o.b. works ton 4
Carbon disultide, t.c., I.o.b. works ton 4
Carbon tetrachloride, CP, consumers, dms., c.l., frt. ald. b.
tank transport (min. 4,000 gals.) in. alid. b.
cardemorn oil, NF, boils. b.
Cardemorn oil, NF, boils. b.
Cardemorns, decort, Guatemelan. b.
green, Guatemalan, bgs. b.
Carmine, No. 40, NF, bulk, 100-lb. lots or more, clivd. b.
Ceara. No. 1, yellow, bgs. ton lots. b.
Ceara. No. 1, yellow, bgs. ton lots. b.
North Country, No. 2, refined, bgs. ton lots. b.
North Country, No. 3, refined, bgs. ton lots. b.
North Country, No. 3, refined, bgs. ton lots. b.
Carnauba wax, North Country No. 3, centrifuged, bgs. ton lots. b.
North Country, No. 3, refined, bgs. ton lots. b.
Carnauba wax, North Country No. 3, centrifuged, bgs. ton lots. b.
Carnauba wax, North Country No. 3, centrifuged, bgs. ton lots. b.
Carnauba wax, North Country No. 3, refined, bgs. ton lots. b.
Carnauba wax, North Country No. 3, centrifuged, bgs. ton lots. b.
Carnauba wax, North Country No. 3, refined, bgs. ton lots. b.
Carnauba wax, North Country No. 3, refined, bgs. ton lots. b.
Carnauba wax, North Country No. 3, refined, bgs. ton lots. b.
Carnauba wax, North Country No. 3, refined, bgs. ton lots. b.
Carnauba wax, 20c, per lb. higher.
b-Carotene, ltq. in vegetable oil, SOO,000 A units per gram, 33 lbs or more. b.
b-Carotene, dry, beads, 10%, 167,000
Aunits per gram, 50-lb cns. lb.
Casoara segrada berk, bulk
Casoara segrad 135.00 14.50 1.30 32.75 pantothenate, calcium chlo-

Cassella acid, 303 mol. wt., dms., trt. Cassella acid, 303 moi. wt., dms., frt.
alid., 100% basis... b.
Cassia, Konitii "A" bgs... ib.
B" bgs... ib.
Cassic oi, Chinase, dms... ib.
Castor oi, raw, No. 1, Braz, tanks... ib.
uSP 5-8 dms... ib.
refd. deod., 5-9 dms... ib.
blown, 5-9 dms... ib.
dehydrated, bodied, tanks... ib.
castor oi, acids dehydrated, dms... ib.
Castor oi, acids dehydrated, dms... ib.
Castor pomece, bgs., container load,
f.o.b., Miami, Fis... ton
Castoreum, nat., cns... ib.
syn., cns... ib.
Catechol, CP, 45-killo dms., 50-238
dms., Io.b... kto... kto...

17.50 1.75 4.75 5.25 4.25 48 37.00

5.30

1.90

ALIFLIA	A	
CHEMIC	įΑ	
PRICES	†	
WEEK ENDING OCT 31,	1986	
fydrochloric acid, 20° Be, tanks,		25.00
works, East	55.00 60.00	65.00 70.00
Guil Coast ton West Coast ton	57.00 90.00	105.00
22° acid, same basis, East ton Midwest ton	68.00 66.00	76.00 70.00
	63.50 100.00	115.00
NOTE: Prices vary and are either freight ized depending on producer and		ight equal-
Hydrocortisone acetate, micronized, dms., 25 kilos or more . gram.	.70	-
Hydrocortisone, alcohol, micronized, dms., 25 kilos or more, gram.	.70	-
Hydrolluoric acid, amiyd (see Hydrogen i Hydrolluoric acid, aquecus, 70%	iuonde)	
tanks., f.o.b. (rt. equald100bs.	43.00	-
Hydrofluosilide acid. 15-gal. dms , t.i., works, 30% basis ton	190.00	210.00
Hydrogen bromide, anhyd. cyls , extra.		210.00
30,000 lbs., f.o.b. workslb. Hydrogen chloride, anhyd., 50 lb. cyls.,	7.00 .65	-
c.i., works,	.62	_
ors, selfer's trailer, min.	.37	_
100,000 ibs. a year ib. tubo trailers, buyer's trailer ib Mydrogen chloride anhyd tanks	.27	-
Hydrogen chloride anhyd., tanks, works	270.00	-
worksib. Hydrogen fluoride, anhyd., (ank cars	.60	-
c I., f o b., frt. equaldlb. Hydrogen peroxide, 35% tech., tanks,	.6875	-
works, it. equald	.2326 .3226	-
70%, tankcars frt. equald ib. Hydrogen sulide, ilq., 99.25% min.	.45	-
seller's (anks, workslb. 170 lb. cylinderslb.	.12 2.27	.13 -
Hydroquinone, photo grade, consum- ers.c.l.t.l.divdb.	2.54	_
tech., dma. c.l., divd	1.95	-
Belle, W. Va	.491%	-
f.o b	.83 henolauto	nic acid).
Hydroxybutyi methylcellulose (visc. 12,000cps.)50lb bags,tl.,cl.		
30,000 lb. min., divd., zone	2.10	-
Hydroxycltronella! dimethyl acetal, dmsib.	16.55	-
p-Hydroxydiphenylamine, dms., t.i., f.o b. works ib. Hydroxyditronellai,	4.10	-
naturai, dms	9.40 13.60	-
extra grade, dmsib. syn., dmsib.	14.80 9.60	=
hydroxyethyl cellulose, Ll., divdib. Hydroxyethyl methyl cellulose (visc.	2.07	2.12
5,000through 45,000 cps.)50 lb. bags, tl., c.L. 30,000 lb.		
mm., awa., zone 1	2.73	-
Hydroxypropyl methylcellulose, pre- mium, U.S.P. (visc. 4,000 through 15,000) 50 lb. bage,		
11, cl., 30,000 lb. mln , divd., zone 1 lb.	2.87	_
hydroxypropyl methylcellulose, U.S.P. (visc. 50 through 100 cps) 50		
ib. bags. t.l., c.l., 30,000 lb., min., dvd., zone 1	2.99	_
Hydroxypropyl methylcefulose (visc. 4,000 through 15,000 cps) 50 5b bags, til., c.l., 30,000 b. in.,		
Givd., zone 1	2.17	-
50 through 100 cps) 50 lb. bags, t.t., c.t., 30,000 lb. min.,		
divd., zona 1		· -
Hypophosphorous acid, puril, 50%	2.64	
dnis,cl.workslb.	2.64 3.15	_
dms,ct,workslb.		<u> </u>
dras, et, workslb.		<u>-</u>
dris et workslb.		<u>-</u>
dnis , et , works lb.		-
ichthammol NF 200-kilo dmsib.		4.50
ichthammol NF 200-lulo dmstb.	3.15	4.50
ichthammol NF 200-kilo dinsib. Ichthammol NF 200-kilo dinsib. Iminod-acetic acid, 96% min., dms., c I. II. works	3.15 4.26 3.00 28.50	4.50
ichthammol NF 200-kilo dmsib. Iminod-acetic acid, 96% min., dma., c I.1.I., worksib. Indole, dmsib. Inositol, 50-kilo dme., 1000 kilos or more. I.o b. workskilo	3.15 4.26 3.00 25.50	=
ichthammol NF 200-lulo dmsib. Inthodacetic acid, 86% min., dms., c I. I. worksib. Indole, dmsib. Indole, dms	4.26 3.00 25.50 17.50 13.60 14.21	22.00 18.00 14.59
ichthammol NF 200-kio dmsb. Iminod-acetic acid, 96% min., dms., c 1,11, works lb. Indoks, dms lb. Inositol, 50-kio dme., 1000 kilos or more, I.o b. works kāo Iodine, crude, dms kālo Iodine USP lb. Iodochiorhydroxyquin, USP, XVI 50- kilo dms., 100-499 kibs, kilo. Iodoform, NF, dms., 300-lbs., I.o.b.	4.25 3.00 25.50 17.50 14.21 35.00	22.00 18.00
ichthammol NF 200-luio dmsib. Iminodacetic acid, 86% min dms., c I., II., worksib. Indote, dmsib. Indote, dmsib. Indote, crude, dmskio Iodine USPib. Iodochlorhydroxygun, USP, XVI 50-kio dms., 100-499 kibs, irt. alid kilo. Iodoform, NF, dms., 300-lbs. I.a.b. worksib. a-lonono, dmsib.	3.15 4.26 3.00 25.50 17.50 13.50 14.21 35.00 24.00 18.20	22.00 18.00 14.59
ichthammol NF 200-kilo dms ib. Iminod-acetic acid, 96% min., dms., cl.,1,, works ib. Indoke, dms ib. Indoke, dms ib. Indoke, ct.,1, works ib. Indoke, dms ib. Indoke, dms ib. Indoke, ct.,1, ib. Indoke, dms ib. Indochlorhydraxyqun, USP, XVI 50-kilo dms., 100-499 kibs, int. alld kilo Indochlorhydraxyqun, USP, XVI 50-kilo dms., 100-499 kibs, int. alld ib. Indochlorm, NF, dms., 300-libs, I.o.b. works ib. Indochono, dms ib. Indochono, dms ib. Ipecacroot, whole, bgs ib.	4.26 3.00 25.50 17.50 14.21 35.00 24.00	22.00 18.00 14.59
ichthammol NF 200-kilo dris ib. iminod-acetic acid, 95% min., dris., c. I, II., works ib. Indok, dris ib. Indok, dris ib. Indoke, dris ib. Indoke, dris ib. Indoke, dris ib. Indoke USP ib. Indochorhydraxygun, USP, XVI 50-kilo dris ib. Indochorhydraxygun, USP, XVI 50-kilo dris ib. Indochorhydraxygun, USP, XVI 50-kilo dris ib. Indochorhydraxygun, ib. Indoken dris ib. Indochorhydraxygun, ib. In	3.15 4.26 3.00 25.50 17.50 13.50 14.21 35.00 24.00 18.20 13.10	22.00 18.00 14.59
ichthammol NF 200-kio dmsb. Iminodacetic acid, 96% min., dms., c 1,11, worksb. Indole, dmsb. Indole, dmsb. Indole, dmsb. Indole, dmsb. Indole, crude, dmskio Iodine USPb. Iodochlorhydroxyqun, USP, XVI 50- kio dms., 100-499 kibs, Irt. alid kilo, iodoform, NF, dms., 300-lbs. I.o.b. worksb. a-lonone, dmsb. Ionone, dms.	3.15 4.26 3.00 25.50 17.50 13.50 14.21 35.00 24.00 13.10 25.00	22.00 18.00 14.59 45.00

ron, purif., powd., palis, 10-100-lb.			Lake C, red toner. (red 53) bbls., frt.	5.70	_	Lith
iotsib. ron oxide, black, syn., bgs., c.l., irt.	1.00 .68ó	.75½	Lanolin, arhyd., coarnetic. 400-10.	1.18	1.25	Lith
equaldb. ron oxide, brown, syn., bgs., c.l., int. equaldb.	.68	.781/2	pharmaceutical, 400-lb. dms. workslb. tech., (under 2% f.f.a.), 400-lb.	1.15	-	Ligh
ron oxide, metaliic brown, I.c.I., bgs., frt. equald	.13	.15	dms., works		113	Lith
ron oxide, nat., red., dom., pure, bgs., c.l., worksb.	275	.40	Lard oil, No. 1, dms., C.I., 1.0.D ID.	.34 .28		Lith Lith Uth
ron oxide, yelow,	.18 .63	. 7 1	Lard oil, extra, winter-strained, dma., c.tlb. tanks, same basislb.	.41 .33	<u>-</u>	-
ron oxide, buff, nat., dom, bgs., c.l., t.f., works, lightlb. derklb.	.75 .60	_60 -	prime, burning, dms., c.i., same ba- sis, Chicago,	.43	- 1	Lith
other shades, bgs., c.l., frt.	.50	.55	prime, burning, tanks, same ba-	.35 Tarrag 20 a	_ ad Mass	Loc 2,4
satoic anhydride, bgs., f.o.b. works b. soarnyl alcohol, 95% tanks, fri.	1.40	- 1,48	NOTE: 300 Mi. rad. 1 14c. higher, except Coast, 3c. higher. Laurel leaves, Turkish lb.	3.00	3.10	Lyc 1-L
alidib. soborneol, 100 lb. dmslb. sobornyi scetate, dmslb.	1.44 7.25 .80	1.16	Laurent's acid, drums, f.o.b lb. Lauric acid, comi., pure bgs., c.l lb.	3.85 .65	.71	_
sobutyl acetate, solvent grade, tanks, frt. alid	.45	.48	Lauric aldehyde (aldehyde C-12).	7.75	-	
sobutyi acrylate, tanke, int. alid. E ib. sobutyi alcohol, tanke, divd ib.	.71 .29	-	n-Lauryi methacrylate, dms., c.l., t.l., works	1.72 6.50	-	Ŋ
sobutytene, 99%, tanks, f.o.b. worksb.	.32	-	Lavender flowers, ord lb. medium, bls lb.	.65 .80	.75 .90	_
sobutyi taobutyrate, tanka, f.o.b. worksb. sobutyi methacrylate, tanka, dvdlb.	.42У≥ .87	-	select. bls	1.10 9.00	1.19 13.00	Ma S
sobutyl phenylacetate, dms	3.10 3.45	3.50 -	spike, Spanish, dms kilo Lead acetate, purif., flake. 400-ib.		14.00	Ma
sobutyraldehyda, tech., dma., c.i., divdib.	.43	_	dms., workslb. tech., flake, t.l., 400lb. dms.,	.46	-	Ma
tanks, divd	.35 No Pri	ices	works	.37 .87	_	
tanks, same basts	.75 .84	_	Lead carbonate. (see Lead white basic callead chlorids, 400-lb. dms., works. lb.		_	Ма
tanks, same basis	.75 5.20	5.60	Lead dioxide, tech., powd., 200-lb. cms.,t.l., workslb.	.66	.70	IVID
soniazid, powd		-	Lead fluoborate, Ilq. conc., dms., t.l., works, int. equald	.65 .24	-	Ma
sononyl alcohol, dms., t. l lb. so-octyl elcohol, tanks, divd lb.	.48 .44 .81	Ξ	Lead monosticate, milled, bgs., c.l., f.o.b. works	.581/2	-	Ма
sophorone, tanks divd b. sophthalic acid, 99%, bulk, f.o.b., Jollet, III., min. Irt. alid ib.	.46	_	coarse, bgs., c.l., same basis lb. Lead naphthenate liq., 24% Pb. dms., frt. slid	.57 ½ .93	_	<u> 1</u>
sophthalonitrile, bgs., t.l., works ib. sopropyl ecetate, tanka, divd ib.	2.65 .47	_	Lead nitrate tech., cryst., 400-lb. dms., t.l., works lb.	.321/2	_	Ma
sopropyl elcohol, anhyd., 99%, tanks, divdgal.	1.38	-	Lead peroxide (see Lead dioxide). Lead red, 95% Pb ₃ O ₄ , or less, bgs. c.l.,	27		Me
reid:, 95%, tanks, divd gal. reid:, 91%, tanks, divd gal. sopropyi ether, tanks, divd ib.	1,31 1,25 ,44	=	works	.37 .37½	-	Ma
crude, tanks, divd	.37	-	Lead, red, 98% Pb ₃ O ₄ , bgs., c.l., same bassb.	.371⁄2	.40V2	М
sopropyl mydstate, dms., t.i., Eib. taconic acid, retd. bgs t.iib.	1.19 1.45	1.50 1.48	Lead silicate (see Lead, white, basic silic Lead silicochromate, bgs., c.i., works	:ate). .35	_	Mi
<u> </u>			Lead sulfate (see Lead, blue, basic au basic sulfate)		ad, white,	М
_			Lead, white basic carbonate bgs., c.l., frt. alidb. Lead, white basic, silicate, bgs., c.l.,	.62	-	١
U			same basisib. Lead, white, basic sulfate, bgs., c.i.,	.87	-	M.
acid, paste, dms., works, 100% ba-			same basis	.85 .36	-	""
siskilo lapan wax.cs	4.76 5.50	6.60	unbleached non-ret. dms., l.c.l., same basis	.34	-	M:
ojoba oil, 55-gal, dms., f.o.b. Arizona producing point gal.	30.00	40.00	edible, tech. bleached, non-ret., dms., t.l., works	.28	-	M
funiperberry oil, (i.elianklio	120.00		unbleached, non-ret., dms., (.l., sære basis lb. Lemonoì, Argentina kilo	.26 15.00	-	м
V			Brazilib. Calif., USP, dmsib.	9.00 8.50	9.50	M
7			Italian	12.60 11.25 2,25	-	
			di-Leucine, dms., 1 kilo works kilo Licorice root, whole, bis	60.00 .40	90.00 .50	м
Ksotin, water washed, fully calcined, bags c.l., f.o.b. Georgia ton	255.00	_	gran., bls	.70 .95 . or Sodium	.90 _ Made eut	
NF pwd., colloidal, bacteria con- trolled, 50 tb. bage., 5,000 lb. lots	.24		Lime, chamical, pabble (quicklime)		-Aren der	M
Kaolin, uncakined. No. 1 coaling, bulk, c.l., I.o.b., Georgia ton	94.00	_	bulk, 60,000 lbs., works, f.o.b. plantston Lime, chamical, hydrated, bulk, same	39.00	45.00	M
No. 2 coating ton	76.00 73.00	-	ton akad emas, stad	48.00 54.00	50.00 57.00	
No. 4 coating ton filler, gen,i purpose, same ba- siston	70.00 58.00	-	Lime, NF, puril., 100-lb. dms lb. Lime oil, dist., Mexican, dms lb. Haitlan, dist., dms lb.	.69 5.60 6.50	=	M
delaminated water washed, uncal- cined paint grade 1 micron	00.00	-	expressed, dms	17.50	-	١.,
avg., same basis ton dry-grd. airfloated soft, same ba-	182.00	- ,	d-Limonene, dms	6.35	.85 -	*
Siston Karaya gum, No. 1, powd., bbisib. No. 2, powd., bbisib.	60.00 2,25 1,95	= .	Linatool oxide, syn., 55-gal. dm ib. Linatyl acetate ex bols de rose off, 90-	2.93 7.75	-	N N
Kola nuts, bgsib.	.50	.53	92%, dms	18.00 3.10	21.00	Ň
ر ندست جب تندایی جندایی باند ا			Linalyi cinnamate, syn., 65-gal.	50 OS	_	^
			Linalyi isobutyrate, syn., 55-gal.dms., , ib.	7.75	8.50	N
			dmsib. Lindane, 20% formulation, dms., dvdgai	19.10	6.65 .	Į Ñ
Lacquer diluent petroleum, 140F			dwdb	8 50	-	N
200F. b.r., t.c., New Jersey and New York	1.25	_	Linslyl propionate, syn., 55-gai. dmsb. Linden flowers, with leaves, bisb.	7.90		١
Lacquer diluent, petroleum 200F -	1.29	=	Linseed meal (see Oils, Fets & Wayses	markat samed	.85 1.15).	
240F. b.r., lankcars, New York and New Jerseygal, Houston, Texgal	1.20	1.25	Lineaed of latty acid, dist., dms th	≝ket report)	.67	┨"
Lacto acid, food grade 88%, f.c., f.o.b.	1.12	-	tanks	. 0014	.82 .60	.
tech88%t.cfrt equald	.82 1.03		iota divi		1	
Lactose, edible, reg. bgs., c.i., works		.28	Lithium carbonate, powd., bgs., c.i.,	4.00	r,	^
Laciose, USP, spray dried, hos. 11	.55	.69	dwd		19. <mark>∓</mark> N. <u>1</u> 921.	\
ira equalo.	,60	e ji r i	eoin., dms., c.l., t.l., divd	. 001.	<u>.</u> A. L	1
ORTER Navember	3,1986			o i		· ·

				-
_	Lithiumhydride, c.l., t.l., dvd, 10,000 or		-	
	ithium hydroxide, monohydrate, dms. c.i., t.i., divd	23.50	-), facty
	Lithium metal, 1,000-lb, fots or more	1.93 1.07	:	pre plant
-	divd. b. Lithium nitrate, tech., dms., 100-lb. lots. lb.	22.70	- !	bul
	Lithium suifate, aphydroug + 1 dbyd B	3.25 1.01 3.09	:	Marq
	Lithol red toner, barlum, dms., irt. alid	3.27		Mang
1	Lithol rubine toner (red 57), resinated,	3.50 5.60		Mario Mann
	Locust bean gum, powd., bas in	5.60 2.50 6.00	675	MBT)
st	2,4-Lutidine, dms., t.l., frt. equald. kgo Lycopodium, 50-lb. dms	5.75 8.00	1000	1/819 1/201
	grade, 10,000 lbs. divdlb.	1.35	140	pus Visian
				Metarr mot
	M			mol L'anha
				Guil
	Macs, East Indian, siltings, b.	4.95	500	L'anth
	Magnesia, tech., light, neoprene-	5.60	575	syn . 2-1 lert
	grade, bgs., c.l., t.l., works ib. Magnesia, syn., tech., chemical- grade, bulk, c.l., t.l.	.75	åı	Verca
	workston bags, c.l., t.l., same basiston	330.00 365.00	:	Percus
	deadburned, bulk, same ba- siston	392.00		Vercu
	bgs., same basiston Magnesia, nat., tech., heavy, 85%, 150 mesh, bulk, c.l., t.l., f.o.b.	409.00	. 1	te
	Nev	232.00 265.00	:	ye te
	Magnesium bromide, 80-lb. dms., hex- ahydrate	2.50	.	Vercu
	Magnesium carbonate, light, tech., bgs., c.l., t.l., works, frt.	.73	,	Marcur Mesityi Markar
	equaldb. USP, lite bgs., c.l., same basisb. USP, heavy, bgs., c.l., same basisb.	.74 .83	n N	Wednad
	Magnesium chloride, anhyd., 92%, flake or pebble dms., c.l.,			d-Meth
	worksib. Magnesium chloride, hydrous, 99%,	.12%	15	d-Megi Metha
	flake, bgs., c.l., worksb. Magnesium gluconate, 100-ib. dms.	.14% 4.25		
/2	f.o.b. works, E lb. Magnesium hydroxide, NF, powd., dms., c.l., t.l., works frt.			Melyio Melyio
	equaldb. Magnesium lauryi sulfate, tanks, i.o.b.	.78 .22	21.	ı
18,	worksb. Magnesium metal, 99.8%, ingots, 10,000-lb. lots or more. f.o.b.	.22	• [d-Methox Methox
	Freeport, Tex	1.53 1.29	130	l. ethyl
	Magnesium nitrate, tech., flake. 250- lb. dms., t.l., works lb.	.32	· [Methyl
	Magnesium oxide, USP, Ilght, bgs., c.l., works, frt. equaldb. heavy, dms., c.l., same basisb.	1.65 1.54	:	Llethy
	Magnesium oxide, tech. (see Magnesia Magnesium phosphate, tribasic, tech.).	ı	Methyi Methyi
	60-lb. bgs., f.o.b lb. Magnesium allicate (see Talc).	1.00	- }	Vethy Methy
	Magnesium silicofluoride, bgs., c.l., t.l. works. b. Magnesium stearate, bulk, t.l., b.	.184 .95	5 1E	Methy Methy
	Magnosium suirate 10% Mg. (epsuir salta), tech. bga., 1.l.,			Methy 99.5 Methy
	worksb.	.14 .13 .13V	, :	Methy
	USP, cryst., bgs., aamo basis . lb. USP, cryst., bulk, same basis . lb. Magnesium sulfate, 17% Mg, (syn-	.14%		
	thetic monohydrate), tech.	.80	-	l Sethyi
ul-	CP, same basis			l'elhy)
	bgs., t.l., works		-	Methylo
	Magnesium trisilicate, USP, power, no.	.38		Vethyl
	USP, micronized powd., ome.	.83	:	Lletty c
	Malathion, tech., dms., t.l., works lb. Maleic scid, cryst., powd., drums, 100 kilos, f.o.b	3.20	• ,	Methylo Methylo Methylo
	Meloic arrhyddide, bas., t.l., works, fit			Vethyl e Vethyl i
,	equaldb	.63	•	Mike
	ib. bqs., t.i., c.i., divd ib.	.81 17.75	Ņ	lect. Vestych Vestych
)				333
	lots. kild Manganese acetate, dihydrate, dms. civd. b tetrahydrate, dms. t.i., divd. b	439 48 1.88	, A	i denta
)	Manganese borate printing in section b	.60		Votalis Votalis
١.	Manganese carbonate, Citalian Age Mp. bas., 20,000	1 1	, ·	Ovd Ovd
	Manganese chloride, anhyd., dms.	.61	2.0	Methylic Verbylin
	Manganese dioxide, nat., African, grd.			- erull
i	I., WORKS.	250.U	380 W	Menty (p.
, .	84% MinO ₃ , same pares Oyst., bet Manganese dioxide, syn., cryst., bet tery grade, 90%-92% MinO ₃ 100-lb. bgs., c.l., works, b chemical, ferthe grade, same be	.70	Ď	May 1
2	Ciperacon, rotate a		## #0	
)	Manganese gluconate, FCC grave	3.60	10 M	Meny in
. ,	Manganese hypophosphite, NF, dna Manganese hypophosphite, NF, dna b	976		legy .
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4 20		
· .	Manganese metal, sleptroypu, sub chip, bulk, cl., works dns., o.l., works Manganese naphthenate, iq., 6%, 10 dns., clyd.			
	waudanese Listricheren	C of the		

mekting compounds, same ba- sis						
## 25-8th cite. ## 24- ## 26-10-10-10-10-10-10-10-10-10-10-10-10-10-		Manganese resinate, fused, 3½% Mr.	.3416		Methyl violet toner, lungstated, PTA	
Engine 1970 200	i	precip. 812-7% Mn. dms ib.		-	4.4. Methylene dianiline (p.p.di	
E plate		as was hose 50-ton cars, divd.			f Crucie.cmst.f fo h in	470
Service adultation of the Service of the Company of the Service of		E.of Miss		-	Methytene di-p-phenylane di-jeoguana	2.25 le (see diphe
Mary		Manganese sulfate, 2076 Mili, grani.	330.00	-	Methylene chloride, lanks, 4 000 dal.	
James J. 2005. 100 J. 302 James J. 100 J. 302 James J. 100 J. 302 James J. 100 J. 303 J. 100 J. 100 J. 3		Manganese tellete, kq., 6% mm, qms., ib.	.60	-	MOUNTED TEATHOR HAS HAVE AND	-n
### Special Compression (1997)		Manniel, comi., powd., dies., t.i.,		-	t J).	-
set jest evergetereachers (see July 1997) geles of party minute A COOL Congress (see July 1997) geles					P-MARINED CORRES DUR MUSIC COL	4 70
And the control of th		unyé waa Marcanin banzoiniazyi Cisuli	ide).		I INTEGRAL OF YEST OF LIGHT COMBONE, DURSTIC, SO	_
Apt. 1.1. same bases b. 50		Mainting, bas., C.I., L.I., 40,000-10.		5914	works	07
in add	1	دا Li same basis lb.			bas., c.i., f.o.b. works	
## 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.		fri. alid LD-	.55	.60	rubber, bgs., c.l., f.o.b. works ib. wallpaper, bgs., c.l., f.o b. works. ib.	.16%
synthic Coart 1.00	1	us		-	ing grades, FDA, tanks.	
proj. 15 present. 50.0 doi: 10.10		Gut corts, same basis lb.		Ξ	Works	.361/2
gr. 1597 neartic, 100-450 bs. 1b. 3.00 gr. 1507 neartic, 100-450 bs. 1b. 1.33 1.65 leverintercrificacy (coulificat Li, 1.25 1.55 leverintercrificacy (coulificat Li, 1.25 1.55 leverintercrificacy (coulificat Li, 1.25 1.55 1.50. 25. 25. 25. 25. 25. 25. 25. 25. 25. 25	'	regular crystals, spot, cs.,	A 50	6.75	I will lot at Oil, White, 50-65 Mg., USP Mht	.381/2
1.50 1.50		syn .USP, racemic, 100-450 lbs. lb.		-) 03-75 VIS., (ANKS, refv	2.42
Colon Service Colon Content Colon Service Colon Servic	1	works, frt. alkdlb.	1.25	1.55	I 143-135 Vis., tanks refu	2.53
Service and court 100-10. Co. S. S. Service (100-10). Co. S. Service (1	i "	oms., works, frt. elld lb.	1.33	1.66	I ZUU-Z1U VIS., tanka, rafv	2.56
1.78 1.78	ŧ	100-ib.dms., f.o.b. worksfb. ercuric oxide, red., purif., 100-lb.	6.50	-	tanks, New Jersey	
## 1. 1. 1	7	tech.,100-lb. dms., same ba-			Mineral spirits, petroleum, regular	
tech. (10-10. dms., same Data St. 100-10. dms.) 1-52 bit decreased dictricities (pairs Calcons). 1-52 bit decreased dictricities (pairs Calcons). 46 bit decreased sext (glassid. (10-), 46 bit decreased sext (glassid. (10-), 45 bit decreased decreased decreased sext (glassid. (10-), 45 bit decreased		yelow NF, 100-lb. dms., same ba-			Houston, Texgal	
### 13.50 ### 13		tech, 100-lb. dms., same ba-			Molybdate orange, bbs	
Sessificate larea, edid		(ecurous chloride (see Calomei).			Molybdenum trioxide, CP, dms	
1. I. f. equald. b. 6. 78	1	lesinfoxide, tanks, divd	.46	-	works, 24,000 lbs. or more.lb. tech., chemical, dms., 24,000 lbs. or	
dris		tl., frt. equald		-	i lech. metallurgical, dms. same basis ib	2 65
bulk, c.l. f.o.b. File. doi: 1.		dmslb.	12.00	16.00	Monoammonium phosphate, feri.	CEIO)
producing point, Gutf Cast. Increase the Hazametriprenie dramine). Increase the Hazametriprenie dramine drami		dmsib.	4.50	7.00	bulk, c.l., f.o.b. Fia.	155.00
Publishment	}	producing point, Gulf	28	_	Monoammonium phosphate, tech.,	100.00
seys-stewly 1., if t. id. i. i. just activity, 1. if t. just activity is activity, 1. if t. i. just activity, 1. if t. just activity is activity, 1. if t. just activity is activity activity. Activity activity activity activity activity activity activity activity activity activity. Activity activity activity activity activity activity activity. Activity activity activity activity. Activity activity activity activity activity. Activity activity activity. Activity activity activity. Activity activity activity. Activity activity activity activity. Activity activity activity activity activity. Activity activity activity activity activity. Activity activity activity activity activity activity activity. Activity acti	k N	eneramine (see Hexamethylenetetram etholine hydroxyanalogue, dry	lne).	_	food grade, bgs., c.l., t.l., same ba-	54.00
Americhopiese Recomplination b		abmachinty (1, frt. alid lb.	.86	-	8is	
Additional processes	d	Methodine (see Recomplished)	.88	-	MOROChloroscetic acid, purif, (see Chloro	.96 Oacetic acid.
Monoelly-learnine, 70% equocus tanks, 15, 40 and 15, 40		ONWERS CITIES US	2.05	_	Monoethanolamine, tanks, frt. alid.	.421/2
### 1. 073. 1. C.1. same bas. ### 1. 076. 1. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.		CTYO.E III.	9.40	-	Monosthylamine, 70% aqueous tanks,	
aid. E. b. 76 Libry spess, spres, chivd. 10 Libry spess, spress, chivd. 10 Libry spess, spress, chivd. 10 Libry spess, spress, pts., chid. 10 Libry spess, spress, pts., chid. 10 Libry spess, spress, pts., chid. 10 Libry spess, spress, spress, chid. 10 Libry spess, spress, spress, chid. 10 Libry spress, chid. 10 Libry spress, spress, chid. 10 Libry spress, spress, chid. 10 Libry spres		sk	10.00	_	anhyd., tanks, same basis	
Monolappropylamine, anityd, dms. 1. 1. 1. 1. 1. 1. 1.		but but		_	Alid. E	
Serial Content Seri	ì	Astryl alcohol (see Methanol) Astryl alcohol (see Methanol)		-	Monoisopropylamine, anhyd., dms., c.i., irt, prepaid ib.	
1.		eth) antiranilate, tech, dens		=	Monomethylamine, anhyd., tanks, con-	
### A		ediyibanzoata daya		2.65	25% soln., tanks, frt. alid. 100%	
Monopolassium glutamate, dm., 980 b. 250 b. bag. t. d., 30,000 b. min. d. d., b. 35 b. bag. t. d., 30,000 b. min. d. d., do., do., do., do., do., do., d	k	elityl bromde, dist., tanks., 140,000		-	40-60% soin., tanks, frt, equald.	
## 100-b. drums c.l. L.I., divid	,	400 through 4 000 ones 50 in	.58%	-	Monopolassium glutamate, dms., 990 lb. or more, frt. alid lb.	
15 op) 80 lb. bags, ut. cl. 3800 bs. (viv. 2ons 1 lb. 2.85 2.85 2.00 cm. 2.0	U	dvi 2000 ib., min.,	2.73	_	g.f., t.l., clivdb.	
Autority	•	Name Propingly OSP (AISC)	2.70	-	Monosodium phosphale (see Sodiumpho	osphate, mo
3,000 be, did, 2019 1 ib. 2.24 bithyricalized (kc. 15 to 25 cps) 50 b. tags, it. cl. 3,000 lb. cl. b. tags, it. cl. b. tags, it. cl. b. tags, it. cl. s. cl. b. 4,65 leafly foreign tags, tarks, cl. b. 5,60 leafly foreign tags, tarks, to b. 5,60 leafly foreign tags, tarks, to b. 1,85 leafly foreign tags, t	V	ethylcathdose, (visc. 400 through	2.85	-	dom., Calif., bgs., a.i., t.i., f.a.b.	
Morpholine, drus. Dus. 1.02 Morpholine, drus. bulk, tanks, 10-k works. bb. 28 Morphoresold me		othylcelulose (visc. 16 to 26 - 1 ib.	2.24	-	raid dom Calif same basia - B	_
Job. works		min (C.)	0.50		Morphine sulfate, USP, 26 k lots kilo Morpholine, dms., c.l., frt. alid, E fb.	850.00 1.02
Agriy persot, drise. Ib. 4.85 b. 6.00 b. 6		f.o.b. works		_	tanks, frt. alid., E	
Mustard oil, syn. (see Allyliacthicoyanate). With egend 25 b. cris. b. 3.55 Mustard seed, Brown No. 1 b. 22 Mustard seed, Brown No. 1 b. 22 Mustard seed, Brown No. 1 b. 23 And, lanks, same besis b. 29 Mustard seed, Brown No. 1 b. 23 And, lanks, works b. 29 Myriact seed, Brown No. 1 b. 23 Oriental No. 1 bgs. b. 22 Myriact seed, Brown No. 1 b. 23 Oriental No. 1 bgs. b. 22 Myriact seed, Brown No. 1 b. 23 Oriental No. 1 bgs. b. 22 Myriact seed, Brown No. 1 b. 23 Oriental No. 1 bgs. b. 22 Myriact seed, Brown No. 1 b. 23 Oriental No. 1 bgs. b. 22 Myriact seed, Comil, pure, t.l., bgs. ib. 1.30 Hyriact seed, Comil, pure, t.l., bgs. ib. 1.30 Hyriact seed, Comil, pure, t.l., bgs. ib. 1.30 Hyriact seed, Comil, pure, t.l., bgs. ib. 1.30 Myristics off (see Nutrineg oil). Myristics off (see Nutrineg o	33	mylchnemate, dris.	ne). 4.65	_	Musk.syn., ketone, dms ib.	10.75
Transition pure, non-ret. dms. bis, sane basis bis, sane basis bis, 29 bish, sane basis bis, 30 bish, sane basis bish, sa	Ü	the manufacture, tanks, divd. F. In.	.236	-	Mustard oil, syn. (see Allyl isothicoyanate Mustard east Brown No. 1	
terytheptands, syn, 55 gal. dms. ib. 14.50 ib. 31 carry heptands, syn, 55 gal. dms. ib. 14.50 ib. 31 carry heptands, syn, 55 gal. dms. ib. 14.50 ib. 31 carry heptands, syn, 55 gal. dms. ib. 14.50 ib. 31 carry heptands, syn, 55 gal. dms. ib. 14.50 ib. 32 carry hydroxybenzoate (see Methylparaben) ib. 32 carry hydroxybenzoate (see Methylparaben) ib. 35 carry hydroxybenzoate (see Methylparaben) ib. 35 carry hydroxybenzoate (see Methylparaben) ib. 35 carry hydroxybenzoate (see Methylparaben) ib. 38 carry hydroxybenzoate (see Methylparaben) ib. 38 carry hydroxybenzoate (see Methylparaben) ib. 41 carry hydroxybenzoate (see Methylparaben) ib. 45 carry hydroxybenzoate (see M	•	and romate, pure, non-ret, dime.		3.80	Canadian No. 1 Yellow	.23
Myristics oil (see Nutrineg oil). Myristics oil (see Nutrinegol). Myristics oil (see Nutrinegol). Myristics oil (see Nutrinegol). Myristics oil (see Nutrinegol). Myristics oil (see Nutri		for tanks, works	.29	-	Myrcia oli (see Bay olh.	
phythoxybenzoate (see Methytparaben) mind is a property of the control of the con	ì	A LAND DUTE COME	14.50	=	tanksib.	
Emiliation tanks, divid. b51 is Machine tanks, divid. b35 ord. zons 3 (W. of Rocides, ex- ducing Casis.) ord. zons 3 (W. of Rocides, ex- ducing Casis.) is Machine tanks, divid. b38 ord. zons 3 (W. of Rocides, ex- ducing Casis.) is Machine, perceloum, cleaner's naphths, perceloum, cleaner's naphths, less perceloum, cleaner's naphths, less perceloum, cleaner's naphths, perceloum, cleaner's naphths, less perceloum, clean	Ŀ,	Thydroxybenzoate (see Mother	45.00 (sben)	-		2,25
Severy Control (see Methyl armyl alcohol), dril tone 2 (Call), dri	ľ	" " RECORD INSTEAD ALLE	1.00	9.40		
during Calif. 3 (W. of Rocides, ex- during Calif.) Ib. 41 Wein restrictly faceupend, 25-b. cns. ib. 6.60 Waphths, petroleum, cleaner's (see Cleaner's naphths, petroleum, faceupend, cons. ib. 14.00 Lab. Maphths, petroleum, cleaner's (see Cleaner's naphths, petroleum, faceupend, cons. ib. 12.0 Waphths, petroleum, cleaner's (see Cleaner's naphths, petroleum, faceupend, cons. ib. 12.0 Waphths, petroleum, cleaner's (see Cleaner's naphths, petroleum, faceupend, cons. ib. 12.0 Waphths, petroleum, cleaner's (see Cleaner's naphths, petroleum, faceupend, cons. ib. 12.0 Waphths, petroleum, cleaner's (see Cleaner's naphths, new Jersey and New Yorks, Naphthslene, crude, dom, 78°, tenks, works, New Jersey and New Yorks, Naphthslene, crude, dom, 78°, tenks, works, ib. 22 Waphthslene, crude, dom, 78°, tenks, works, ib. 23½ Waphthslene, crude, dom, 78°, tenks, works, ib. 22 Waphthslene, crude, dom, 78°, tenks, works, ib. 30 Waphthslene, crude, dom, 78°, tenks, works, ib. 22 Waphthslene, crude, dom, 78°, tenks, works, ib. 30 Waphthslene, crude, dom, 78°, tenks,	ŀ	Mischard Carbinol (see Methyl array) at	.51 cohoj).	-		
tenting application of the content o	ŧ.	dirt. zone 3 (W. of Posters Ib.	100	<u> </u>		
Aphtha, USP, 500 kilograms, 1.0.b. kilo 10.14 - Houston, Tex		a couperol 25-th con		-	Manhtha high achiency (see Solvent nert	the pelmie
Lab. USS 500 kilograms 1.00		ithy naphthyl ketone, divd ib.		-	Naphtha, petroleum, cleaners (see Cleans	
Maphthelene, crude, dom., 78°, tarks, and 22 morks. Maphthelene, crude, dom., 78°, tarks, works. Maphthelene, crude, dom., 78°, tarks, works. Maphthelene, phthalic anhydride grade, tarks, works. Maphthelene, petroleum, 80°C. Juntalian and tarks flo.b. Maphthelene, retd., bells, flakes, whole salers, jobbars, disk, works in the s		iab. 500 kilograms.	4.00	- !	New Jersey and New York-	1.29
Works 1	ŀ"	Py parettion tech kilo		=	(Asrbutusisus' Carros' dous' 1.0., ranka'	1.20
James Communication of the com		The second of th	1 65		Naphthalene, phthalic anhydride	
Machthelene, refd., bais, flakes, whole salers, jobbers, dms. Sept. Sep		plan discone, tanks, f.o.b.	:	5.40	grade, tanks, works 10. Nachthalans petroleum, 80°C	1.1
Lift aid. 1000-tb. dms. b. 1.78 Naphtheric acid, crude, bulk, works b. 30 refined, 220 sold, same basis b. 80 refined, 220 sold, same basis b. 80 tbs. dist.	- 1	TM mean at 11, 88me hoeld		-	Naphthalene, rafd., balls, flakes, whole	يها وحال
the druck of the chloride). 1.84 refined, 220 acid, agrie pass. 8-Naphthol, ground may bl. divid., b. 1.81 bls. druck of Polytoderd, PMA. 1.84 refined, 220 acid, agrie pass. 1.84 refined, 220 acid, agrie pass. 1.85 refined, 220 acid, agrie pass. 1.85 refined, 220 acid, agrie pass. 1.86 refined, 220 acid, agrie pass. 1.87 refined, 220 acid, agrie pass. 1.88 refined, 220 acid, agrie pass. 1.88 refined, 220 acid, agrie pass. 1.89 refined, 220 acid, agrie pass. 1.80 refined, 220 acid, agrie pass. 1.80 refined, 220 acid, agrie pass. 1.81 refined, 220 acid, agrie pass. 1.82 refined, 220 acid, agrie pass. 1.83 refined, 220 acid, agrie pass. 1.84 refined, 220 acid, agrie pass. 1.85 refined, 220	Ē.	Must ald 1000-th dms.	5.50	- ;	Works	. 65 30
	Í	WIND IN THE PROPERTY OF THE PARTY OF THE PAR	1.79 a)	1.94		BO .
					b-Naphthol, tech. flake, 80,65, bgs., c.l.,	1.10
			A	, , , V.	The state of the state of the state of	(4.); (5.);
		3,		1.7	16 4 6	المرافع تواعموا

	Novembers, 1986	, , , , ,	CHEMIC	AL MARKETING REPORTER	.6.90 ₹,
	teriks. Ojelo ściłd, s.d. (red) dms ib.	38 .43 .85	44 49 41	Brazilian kilo	6.50
43 90	Officion off, Eq. done	40 32 48	59	Milemette	15,00- 11.00 8,00 7,00
1.0 Te	Octylphenol, molten, t.o.,	78	7012	Pepper, while, Muntok, bgs	2.65 14.00
321/2	n-Octyl, n-decyl phthalate, tanks, dvd	. 33½ 2.60	.37	Indian, S-4, bgs	.70 .43 3.05
-	Houston, Tex	1.40	1.75	Halmen, bgs.	1.00 .76
1.34	1-Octanol, syn., tanks, f.o.b b. n-Octano, 97% min., tanks, f.o.b.	.70 6.25	ا - ا ا	Malabar, Dga	2.28 2.35
	1-Octadecanol.svn. tanks.f.o.blb.	5.25	- 1	Pepper, black, Brazillan, bgs, ib.	32.00 2.28 2.30
oleum). the).	Ochre (see Iron oxide, yellow, net.) Ochtes cymbarum oli dms kilo Ochtes Chibase 90%	6.15	5.20	Pentylene tetrazol, NF, dms., 200-kilo	14.00
·				frt. ald	7.00
	U			Pentaerythritol triacrylate, t.l. dms.,	1.60
			<u>.</u> [Tripentaerythritoh.	./1 Spentae
	Nutnege, East Indian, whole fb.	3.15		fri. alid.	.66 .71
_ = =	Nutmeg oil, dist., East Indian, NF, dmsklio	32.00	34.00	Pennyroyal oli, dins. b. b. Pentachicrophenol, 50-lb. bgs., t.f., f.o.b. Wehlts, Kan. b.	10.25
-	les, min. (ft. elid,,); Norephedrine hydrochloride (see Pheny drochloride)	.49 Ipropana	.53½ Namine hy-	Penicilin, proceine, sterile 50- billionunits unit lote, bulk billion units	25.00 36.00
-	tanks, worksb. Nonyiphenol, tanks, f.o.b. E. of Rock-	.70		syn., tanks, f.o.b. (rt. siid, jb). Penicilin, potassium, pon-sterile, 200.	.70
-	tanks, same basis ib. p-Nitrotoluene, tech. dms., c.l., works	.48 .83	.57 .85	klic lota divid	3.30 .70
7.00	m-Nitrotoluene, tech., cima., frt. alid.lb. o-Nitrotoluene, dma., c.l., f.o.blb.	1.15 .65	- 	Peanut of (see Oils, Fats & Waxes marke) Pectin dom. NF. clims, powd., 100.	report).
-	p-Nitrophenol, dris., o.i., f.o.b. works	1.05 .55	1.45	Peanut meal (see Oils, Fats & Waxes man	ket renov
-	Niromethane, dms., t.i., divd. E ib. c-Nitrophenol, dms., f.c.b. works ib.	2.37 1.00	=	chlorinsted, (red 4) kgs	3.75 18.50
.ai 	expanded, bulk, c.i., per unit-ton N, f.o.b. Forrestdele, R.I. unit ton	8.35	-	Parathion, ethyl, dma., frt. ald b. Parathion methyl (see Methyl parathion). Para toner red, bols	1.75 3.75
– monobasic). .57	per unit-ton NH ₄ , f.o.b. Carrol- iville, Wisc unit ton f.o.b. Forbes, Me unit ton	7.00 8.75	<u>-</u>	tanks, divd. E	.769 .587
.80	producer,s works, Chicago. Nitrogenous tankage, processed, bulk,		wuk, 1.0.0.	c.l., t.l., divd	.29\ .39\
- -	esed, bulk, f.o.b. Chicagounit ton. NOTE: Price is per unit NH ₃ plus \$1, per	4.10 unit a.o.a	. hulk for	Paraformaldehyde, 91%, flake, bgs.	igher the
-	N	1.26	1.46	12% oil, tanks refy	.19 .21 .16
½ <u> </u>	over 32% N, and mgf. type, worksunit-ton. drect application, 19-32%	1.20	-	140-145 F., ASTM, tanks, refy. 150-155 F., ASTM, tanks, refy. sleck wax, 5% oil, tanks refy	.35 .411
Ξ	Nitroethane, tanks, divd. E	2.50	-	130-135 F., ASTM, tanks, refy.	.29 .33
-	2-Nkro-p-cresol, tech., dms., Li., frt.	.74 1.75	-	Paprika, Hungarian, 100 AU bgs ib. Spanish, 110 AU bgs ib. Parstlin, fully-raid., 127-130 F., ASTM.	.80 .90
-	6-Nitrochlorobenzene, dms., t.l., c.i., f.o.b	.82	-	imp. bulk kilo	56.00
-	O-Nitroanisole, 100-kilo lots kilo Nitrobenzene, tanks, f.n.b	8.75 .33	- - .34	Palmarosa oil, Indian dms. klo Palmitic add, 90%, tech., bags. lb. tanks. lb.	42.00 .53 .51
.46	p-Nitroaniline, dms., c.i., t.i., 30,000 lb. min., works lb.	1.90 1.63	-	Palm kernel oli, bulk, c.i.f., U.S. ports	.18
icid, mono). 1/2 –	o-Nitroaniline, grange toner, bos. frt	1.37	-	s.d., dms	42 35
1.00	works	1.51 1.44	=	Paim Oil, (see Oils, Fats & Waxes Marks Paim Oil acid, dbi-clist, dms jb. tanks	t Report 31 30
_	94½% to 98% HNO ₃ , tanks, works, 100% basis ton o-Nitroeniline, flake, dms., t.l.	280.00	-	Palladium metal, works Troy-oz.	130.00
ı	42°Be. tanks, c.l., works NF, 100% basis	195.00	-		
_	Nicotnamide (see Niacinamide). Nitric acid. 36° Be 38°Be. 40°Be			P	
	lb. lots, f.o.b. works lb. Nickel suifate, bgs., t.t., divd. E lb. Nicotinic acid (see Niacin).	2.60 .80	. 9 0		
2.85 2.85	Nickel oxide, 75%-78% Ni. dmg. 500-	1.18	-	alid	4.00
	Nickel nitrate, dms., bos., t.l., divd.	3.45	-	Oxyquinoline sulfate, 100 lbs. frt.	8.00
-	Nickel fluoborate, liq. conc., dms., t.l., dlvd. E	1.25	-	b-Oxynaphtholc sold dms. works, tech	2.55
1.43 1.95	divd. E	1.19	_	Outloury wax, refd., pure, bgs b. Oxalic scid, bos., c.i., works	3.25 .44
1.49	lbs. to t.l., divd. F.	1.82 3.45	-	Verona bis	4.60 3.00 4.60
1.88 1.79	Nickel acetete, dms., 5,000-lbs. to t.l.,	5.10	5.50	Organismosi, Spanish, cns kilo Orris root, Florentine, bis	35.00 4.00
3 - 5 -	feed-grade, 98-99-5%, hos same	7.60	-	Mexicoib.	2.80 2.80 1.05
-	Niecin NF, dms., 5,000 kilos or more	7.22 8.00	Ξ	dmsb. Oranga peel, bitter, Haltlan bisb. Oragano, Greece, 30Mb.	13.00
- - -	Neroli oli, Tunislan, botskilo Nerolidol syn. 55-gal. dmslb. Nerolin, Bromelinkilo	7.05	- -	West Indian, bitter, NF X, cns.	1.00
BV2 .48	perf. grade, dms	5.30	5.75	Florida dris	1.Q(.9(.6(
8½ .46½	Neopentyl glycot, slurry, 90%., c.l., t.l., dlvdlb. powder, lieke, bgs. t.l., dlvdlib.	.52 .59	В	dms., f.o.b. plant ib.	1 20
		75.00	-	Opium. USP, gran. powd. 25-kilo	125.00
6¼ - 6¼ - 2 -	higher and West Coast 3c. high Neomycin suifate, USP, non-sterile, dms., 50-kito. lots, activity ba-	ier.	, . w. us, Eü.	20 mesh, works ton	12.00 15.00 20.00
7 _ 	Philadelphia, Pa.: other grees	llan bish	man and be at	Italian B-type	8.00 5.46
7½ - -	40°F, dms., i.l., i.o.b. works lb.	.44 .48	- .49	Oleum (see Sulfuric acid, fuming). Olbanum gum, tears, bgs	2.10
8 –	30°F, t.l., f.o.b, works	.47 .52	Ξ	WEEK ENDING OCT 31	, 198
4 -	Neatatoot oil, 20°F, tJ., f.o.b. works	oblas acid 52.	1 }.		
hyl-pyrazolone	2-Naphthylamine-3-sullonic ecid (see L. 2-Naphthylamine-4,8 disulfonic ecid (se 2-Naphthylamine-1-sulfonic ecid (see T.	aurent's e	cid).	"LKICE"	
15 -	works (EI)(8, 1.O.D.			PRICES	<u> </u>
5 phenyimethani	1-Naphthol-5-sulfonic 8-amino acid (see Naphthylamine sulfonic mixed ecid (see			CHEMIC	4
'5 <u>-</u>	2-Naphthot-3 6-duationic cold discours	7.75			M
0 5.20	Naphthol arylide red toner deep shades, bbis	9.50	_		_

WEEK ENDING OCT 31, 1986

The second lives and the second lives are the second lives and the second lives are the secon		
Oleum (see Sulfuric ackl, furning).		
Olibanum gurn, tears, bgs lb.	2.10	_
Olive Ott, Boligie, Spanish, chis ani	8.00	-
ICHIRAN D-TYDB	5.40	5.50
Olivine, crude, worksion	12.00	-
20 mesh works ton	15.00	-
100 mesh. works ton	20.00	-
Oplum. USP, gran. powd. 25-kilo		
lota kilo	125.QQ	-
Orange oil, expressed, USP, Calif.	_	
dms., f.o.b. plant lb.	1 20	-
expressed Valencia, dms ib.	1.00	1.20
Calif., dist., cns. f.o.b. plant lb.	.90	1.00
Florida, dms	.60	.00
Brazilankilo	1.00	-
West Indian, bitter, NF X, cns.,		
dms	13.00	-
Oranga peel, bitter, Haltian bis b	.38	_
Oregano, Greece, 30M	2.80	_
Turkeyb.	2.80	_
Mexico	1.05	_
Onganum oil. Spanish, cas. kilo	35.00	_
Oms root, Florentine, bis	4.00	_
powd., bbs., bxs., Ib	4.60	5.00
Verone bis	3.00	
powo., bbis., bxs in	4.60	5.00
Ouncury wax, reid., pure, bos b.	3.25	3.35
Oxanc acid, bos., c.l., works ih	.44	
D-Oxynaphthoic acid dms. works.		
(ech	2.55	_
Oxyquinoline base, pure, 1,000 lhs		
11t. 2010	8.00	_
Oxyquinoline sulfate, 100 lbs. lrt.		
alidib.	4.00	-
Oxyquinoline sulfate, 100 lbs, fri.		

	Palledium metal, works Troy-oz.	12000	
		Report	-
	Parm oil acid, dbi-dist, dms	311/2	_
	tanksb.	30	
	s.d., dms	.42	.45
	Palm kernel oil, bulk, c.i.f., U.S.	.35	-
	l ports	1812	.194
	I Palmarosa oil. Indian dms kilo	42.00	-
	Palmitic acid, 90%, tech., bags ib. tanks ib.	.53	-
	Papaverine hydrochloride, NF powd.	.51	-
	Imp. bulk kilo	56.00	_
	I Paprika, Hungarian, 100 AU box. Ib.	.80	-
	Spanish, 110 AU bgsib. Paraffin, fully-raid., 127-130 F., ASTM.	.90	-
		.29	.35
	I 130-135 F ASTM tanks calls	.33%	.39
	140-146 F., ASTM, tanks, refy. 150-155 F., ASTM, tanks, refy. eleck wax, 5% oil, tanks refy.	.35	.411/2
	150-155 F., ASTM, tanks, refy.	.411/2	.46
	12% of tanks refy	.19 .21	-
	12% oil, tanks refy	.16	
	I AMP COMBERNIUMS ARE ON ARTISTANI SE N	gher than /	ASTP.
	Paraformaldehyde, 91%, fiske, bgs. cl., t.l., dlvdb. 95%, powd., bgs., c.t., t.l. dlvd. b.	_	
•	GL, T.L, GIVG	.291/2	-
	Paraktehyde, tech., 98%, 65-gal. dms.	.39%	-
	i i.i., giya, E	.761%	-
	tanks, divd. E	.58V2	-
1	i Paraunion, Bunyi, Onna., Irt. 88d Rs.	1.75	-
	Parathion methyl (see Methyl parathion). Para toner red, bbls	3.75	
	Chiorinated, (red 4) kos	3.75	Ξ
- 1	Palchouli oil Indonesian dose 1464	10 50	20.00
ı	Patchouli of, Chinesekilo	19.00	21.00
1	Patchouli of, Chinese kilo Peach kemel oil, USP (see Apricot kemel oil, USP (see Apricot kemel of Peanut meal (see Oils, Faits & Waxes mari	XI).	
J		moort).	
1	Pactin dom., NF, citrus, powd., 100- kilo lota divd ib.	. opoloji	
1	kio lotadivd ib.	3.30	3.70
ı	Paragonic acid, nat., ISDKS, min. Itl.	70	
Ī	alid ib. syn., tanks, f.o.b. irt, alid ib.	.70 .70	_
ı	renown, potassium, non-sterile, 200-		
1	DENOM-CURE NOOP**** COMPOUNTING	25.00	30.00
ı	Penicilin, proceine, sterile 50- billion- unit lots, bulk billion units.	36.00	
ı	Pennyroyaloli drns	10.25	_
1	Pennyroyardi, drns		
ı	I.O.O. VYICHIUM, KAIH	-66	-
ı	Pentserythritol, tech., bgs., c.l., f.o.b., frl. alid	.71	70
1	Pentaerythritol, di- and tri-isomers (see D	icenteeryt	.72 hritol end
L	r noenwervinnion.		
ł	Pantaerythritol triacrylate, t.l. dms.,		
ı	Pentoberbital dime: 100 the or more	1.60	-
ı	f.o.b. works	7.00	_
ı	roncombiana-accident, chils ICC lick.		
ı	OF INDIFFE CRYCI	14.00	-
Į.	Pentylene tetrazol, NF, dms., 200-kilo	32.00	
ŀ.	lots. kilo Pepper, black, Brazillan, bgs. ib. Lampong, bgs. ib.	2.28	. ∑:
Г	Lampong, bgs	2.30	
ı	Melana infarrerent in interest 10	2.28	-
ľ	Tellicheny bgs. Pepper, red Chinese Fuklen rice bgs lib.	2.35	. 7 0 - 7
١.	Maumon, Don	. 89 1.00	· <u>I</u> ` _
L.	Contraction and a second and a second	76	
D		. 70	1964 B
ľ		.43 3.05	(- }
Į.	Pepper, while, Muntok, bos lb. Peppermini leaves, irrip., dms lb.	2.65	.; <u>₹</u>
۱	Peppermintoli, Madras	14.00	· ·
ľ	INNERWOOD CO. F. C.	15.00 .	- ' '
		11.00	
П	Yekima. Bo. Syn. dms. Lo.b. works Br. Brazilian kijid	8.00 7.00	9,00
١	Brazilien kilo	6.50	AMA.
I.	Chinesekilo //	6.90	- 1
r	AL MARKETING REPORTER	•	53
v.	GALAKARINE LITTE KENDARAHA	i	

ΛL	EMICAL
PR	ICEC
I F N	IVLJ

DRIL: P	١		Phthalyisulfacetamide, dms., 500- kilo.	8.61	
PRICES	•	ŀ	Picolines, reid, mixed, bulk kilo Picric acid, purepaste, 25-ib. ctris., c.l., dry basis, f.o.b. Charlotte,	2.81	
WEEK ENDING OCT 31,	1986	_	N.C	8.00	
			sis, 1.o.b. Charlotte, N.C b. Pigment green B, kgs b.	5.00 2.20	
archioroethylene, dry cleaning grade, distr., tanks, divdib. indust., grade, consumers, tanks,	.281/2	-	Procerpine hydrochloride, USP dms		2.000
divdb.	.31 2.55	-	Pimento see Alispice Pimento leef oil, dms	13.90	
manent red 28, (red 48), calcium saits, dms. frt. alld lb.	5.25	_	Pine oil, 80% min. alcohol content. bulk, 1.o.b. works 100 ibs	47.00	53
arium salis, same basis ib. u balsam, 1,0,5	5.25 3.25	-	dms., c.l., t.l., same basis 100 ibs	61.00	54
tgrain oil, Paraguay	5.00	-	a-Pinene, periume gradekilo tech. gradeb.	1.62 .18	
c.l., rety	.375 .310	_	b-Pinene, perfumery grade, tanks kilo tech. grade, tanks	2.30 .35	
5P, soil white, dms., c t., refy lb. nks, refy	.375 .310	Ξ	Piperazine, anhyd., dms., t.l., frt. alid. E	1.80	
6P, idy white, dms., c.l., refy(b. olatum, USP, Lilly white, tanks,	.370	-	Piperezine citrate, 36%, dms., 1,100- lb. lots, frt. alfd	2.25	2.
refyb. iP, cream, dms., c.l., refylb.	.305 .365	Ξ	Piperazine dihydrochloride, 53%, dms., tl., int. alid ib.	2.00	~
nks, refyb. SP, soft yollow, dms., c.l., refylb.	.30 .350	_	Piperazine hexahydrate, 44%, dms., 1,100-lb. lots, frt. slid b.	1.60	
ks, refy	.285 .345	Ξ	Piperazine phosphete, 42%, dms., t.l., frt. elidb.	1.80	
ks, refy	.260	-	Piperidine dist. 98% mln., dms., c.l., t.l., workskilo.	6.92	
eum autoriate, 60-62%, autoric cont., HMW, bulk, works(b.	.4814	.49	Piperonyl butoxide dms., divd. E ib.	5.00 573.00	
MW, same basis ib. MW, same basis ib.	.49 .49	.4914	Polycarbonate resin, pellets, nat., (.i., frt. alld	1.84	1.
os for 51% sulfonic content 2a pe spanding molecular wts.	ar Ib. fowe	r on corre-	Polyester resin, unsaturated, g.p., or-	1.04	١.
acolin USP, powd., 200-lb. dms., 1,000-lb. lots, dvd lb.	2.20	_	thophthelic, bulk, tankcars, irt.elidb.	.51	
0-Rs. dms., 1,000-lb. lats, divd. lb. enetidine, dms., c.l., f.o.b lb.	2.22 2.00	2.45 -	Isophthelic, same basis lb. Polyethylene resin, high-density, blow	.58	
nobarbital, USP, dms., 600-kilo lots., f.o.b. works kio	19.50	-	molding, g.p., hopper cars, int.	.44	,
lots, f.o.b. works kilo	27.00	_	injection molding, g.p.,hopper cars, frt. alid lb.	.43	
iol, Byn. tanks, frt. equald lb. ienolsulfonic acid, 65% sol'n.,	.25	.29	extrusion, g.p., hopper cars, same basis	.47	,
drns.,c.l., fob works fb. nks, samo basis	.64 .58	-	wire and cable, nat., hopper cars, same basisb.	.54	
othiazine, indust. grade, 50-lb. bags, c.l., f.o b. workslb.	2.33	_	wire and cable, black, same ba- sisb.	.65	
ni grado, same basis lb. yl acotate, dms., 100-lb. lots,	2.69	-	Polyethylene resin, low-density, film liner, hopper cars, int alid. Ib.	.35	
lacetic acid, pure cryst., 25-lb.	1.04	-	clarity film, hopper cars, frt.,	.35	
cnslb. nenylafanine, dms., 25-kilo	4.50	-	paliet strink film, hopper cars, same basis	.35	
lotskilo. nyl-3-carbethoxy pyrazolone-5.	84.00	-	extrusion coating, hopper cars, same basisb.	.38	
dms. 2004b. fols. divd E fb. nylenedlamine, cast. dms., c.i.,	3.45	-	g.p., hopper cars, same basis lib. Polyethylene linear low-density g.p.	.36 .37	
t.i., f o b works	2.07	-	resinblown film resin	.36 .40	
1.0 b. works	3.25	-	Polyethylene resin, low-density injec-	.40	
t.o b. works	4.00	-	Non molding, g.p., hopper cars, same basis	.45	
100-kilolots or morekilo. riethyl acelate, dms lb.	175.00 3.35	185.00	line wire, CATV, power cablelb. wire and cable thermoplastic high-	.70	1
fethyl sicohol, NF, dms ib. fethylamine, dms., 30,000 lbs	2.10	2.20	voltage, natural color, same basisib.	.80	
or more, frt. alld lb riethylphenyl acetate, 25-lb.	1.50	-	wire and cable, XLPE low voltage, 14% carbon black, same		
glyconic acid (see Mandelic acid).	5.50	6.90	basis	.68 .60	
rhydrazina, 99% min., drns lb. enyl-3-methyl-5-pyrazolona,	3.50	-	Polymyxin sulfate, USP, bulk, 50-bition units min million units	.52	
drns., 250-lb. lots divd. Elb. snylphenol. dms .t.l., workslb. envishenol. bast.l40.000 be	1.80 1.35	2.00	Polyoxyethylene sorbitan monos- tearale, dms., 20,000-lb. lots		
enyiphenol, bgs , t.l., 40,000 lbs. or more, works b.	1.85	-	Polyoxyethylene sorbitan tristearale,	.73	
nyipropanolamine hydrochloride, 100-kilo dmkão nyisalicylate, purit. crystdms.,	24.00	28.00	dms., 20,000-lb. lots, workslb.	.73	
E	2.76	-	Polypropylene resin, homopolymer, g.p., nat., 1.l., frt. elid ib.	.45	
ech., cryst., E	2.25 2.35	:	copolymer, med. impact, natib.	.50	
200.	1.95	2.05	high impact, same basis	.53	
osgene, 1-ton ret. cyls., 5 to 9-cyl. quantities, worksb.	.55	.67	each grade. Polystyrene resin, cryst., nat., hopper		
sphate rock, Fla., (and pebble, run of mine washed, 66-68% b.p.l. bulk c.l. mines	99 4-		cars, int. alid , lb. Impact, nat., hopper cars, same ba-	.47	
butk all mineston essel, Tampa, same basiston	23.15 28.00	-	515	.48	
sphoric acid, com'l. and tech. grades, 75% 1anks,	00.00		expandable beads (EPS), pkging	.49	
Works 100 lbs. 80% lanks works 100 lbs. 85% N.E. tenks for his feets	29.00 31.00	-	grade, 1,000-lb, fotslb. modified, same basislb.	.69 .71	
85%. NF tanks, f.o.b. freight equald	33 50	-	Polyvinyl alcohol, fully hydrolyzed.	•,	•
od grade pross \$2.00 above tech. g sphoric acid, agricultural grade.	r#00.		divdin	1.00)
52-54% B.p.a., tenks worksunit-ton	3.10	-	ly, bos., LL, divd.	1.05	i
super, min 70% a.p.a., same basis	3.45	-	Polyvinyi chicride resin, g.p., homo- polymer dispersion, bgs., t.i.,		
C f . works, ir t. equaid Ib.	1 00	_	g.p. Suspension, bulk, same ba-	.50)
tanks, works, f o b, works, .(b). sphorus oxychloride, tanks, frt.	.91	-	Si3	.38 .47	
equadb. sphorus peniasullida, powd	.40	-	film grade, bulk, same basis jb. Polyvinyi chloride, q.p. copolymer dis-	.37	
toto bins selers 100 bs.	50 00 45.00	-	g.p. copolymer suspension same	.58	3
riorks	.82	-	Poppyseed, Dutch, bos	.40 .59	
ospinorus sesqueulfido, dins , cvs , c l , works	.38	-	Potash agricultural (see Potassium muri	24	
osphorus trichlorida, dms., c.i , worksb.	.40	_	works	-	
anks, works	.35	-	West Coast, 50% basis, tanks,	13.0	
frt equaldib. nolten, lanks, same basisib.	.30 .27	-	ex terminal 100 lbs. reg. flake, 88-92%, 400-lb, dris., c.L.	18.0	
ices 1-11%; per ib. higher on the We halvnide flake, works	BI Coast .85	-	works	42.3	
halocyanine blue tonor, red shade, bis , fri. alid E of Rockios ib.	8.10	9.50	works E	. 91	
mon chada sama basis h	6.40	8.50	bgs.,c.t., worksb. Potessium bicarbonate, USP, gran.,	.8	11/2
rcen shade, same basis b. esinated, bbis , same basis fb.	6.20	8.75	dms.,tJb.		

Phthalocyanine blue toner, water dis-			Potessium bichromate, gran., 400-lb.	10	
persable, bbls., same ba-	7.05	7.75	dms., c.l., t.l., works ib. Potassium billuoride, tech., dms., t.l.,	.48 .45	- .49
Phthalocyaninegreen toner, ali grades, bbis., frt. alid. E. of Rock-			works., frt. equaldlb. Potassium bitartrate, NF, gran., powd.,	.90	1 20
ies	8.10	10.10	bgsib. Potassium borohydride, powd. dms.	18.00	20.00
bbls., same basis b. Phthalylgulfacetamide. dms., 500- kilo	7.45	9.20	100-1,000 lbs., works lb. Potassium bromate, gran., powd., 200-lb. dms., c.l., 1.o.b.	10.00	20.00
lotskilo. Piccifnes, refd, mixed, bulkkilo	8.61 2.81		workstb. Potessium bromide, NF., gran., dms.,	1.08	-
Picric acid, purepaste, 25-lb. ctrs., c.l., dry basis, f.o.b. Charlotte, N.Cb.	6.00	_	c.l. f.o.b. works lb. Potessium carbonate, fig., 47% K ₂ CO ₃ .	1.12	-
tech., paste, 25 lb. ctns., t.l., dry ba- sis, t.o.b. Charlotte, N.C b.	5.00	_	tanks, i.w., works 100 lbs.	14.60 20.65	-
Pigment green 8, kgsb. Procerpine hydrochloride, USP.	2.20	-	calcined, 99-100% K ₂ CO ₂ , hopper cars or trucks.		
drns		2,000.00	works 100 lbs. bgs., c.l., 1.l., works 100 lbs.	32.50 35.20	-
Pinento leaf oil, dms	13.90	-	drums	36.40	-
bulk, t.o.b. works 100 lbs dms., c.l., t.l., same	47.00	53.00 54.00	400-lb. dms., 6-dm. lots lb. Potassium chlorate, cryst., dms., c l.	.40	.46
basis	51.00 1.62 .18	.23	works	.14\2 .30	-
b-Pinene, perfumery grade, tanks kilo tech. grade, tanks	2.30 .35	.40	purif., gran., 325-lb. dms f.o.b. shipping pointlb. Potassium chloride, chemical grade,	.40	-
Piperazine, anhyd., dms., t.l., frt. alid. E	1.80	_	99.95% KCI, bulk, c.l., 1.o.b workston	105.00	_
Piperazine citrate, 36%, dms., 1,100- ib. lots, frt. ald	2.25	2.35	USP cryst.dmslb. USP gran.,dmslb.	1.12 .67	-
Piperazine dihydrochloride, 53%, dms., tl., iri. alidb.	2.00	-	USP powd., dms	.67 asslum muri	_ late).
Piperazine hexahydrate, 44%, dms., 1,100-b. lots, frt. ald b.	1.60	~	Potasalum chromate, purif., cryst., dms.,worksb.	.57	_
Prograzine phosphete, 42%, dms., t.l., frt. slidb. Progradine dist. 98%mln., dms., c.l., t.l.,	1.80	-	Potessium citrate, NF, gran., 200-lb. dms.,frt, alld	.931/2	-
workskllo. Piperonyl butoxide dms., dlvd. E ib.	6.92 5.00	-	Potassium cyanide, dms., 20,000-lb. lots or more, f.o.b. works lb.	1,32	-
	73.00	-]	Potassium dichromate (see Potassium bichromate).		
frt. alid	1.84	1.86	Potassium fluoborate, tech., dms., c.i., t.i., works, frt. equald ib.	1.40	1.42
thophthalic, bulk, tankcars, frt. alid	.51	.53	Potassium fluoride, anhyd., dms., t.l.,	1.68	-
isophthalic, same basis lb. Polyethylene resin, high-density, blow	.58	.62	works	1.45	-
molding, g.p., hopper cars, frt. alid	.44	.52	Potassium gualacolsulfonate, 300-to. dms., 600 lbs. or more irt.		
cars, irt. alid ib. extrusion, g.p., hopper cars, same	.43	.46	equaldib. Potassium hydroxide, tech. (see Potash	2.10 , caustic).	-
basis	.47	.48	Potassium hydroxide, USP, pellets, 100-lb. dms., c.l., t.l., works,		
same basisib. wire and cable, black, same ba-	.54	.65	frt. squakf	1.29	1.31 12.39
Polyethylene resin, low-density, film liner, hopper cars, frt alld . lb.	.65 .35	.75 .36	ACS grade truckloadib. Potassium-magnesium sulfate, std	11.32	13.55
clarity film, hopper cars, frt.,	.35	.37	bgs. workston basis 40% K ₂ SO ₄ and 55%	69.00	-
pallet shrink film, hopper cars, same basis	.35	-	Mg90,bulk, works ton Potassium metablaulfata, gran., dms.	67.00	-
extrusion coating, hopper cars, same basisib.	.36	.42	t.lib. Potessium muriate, 60-62,4% mln.	.44	-
g.p., hopper cars, same basis ib. Polyethyrene linear low-density g.p. resin	.37 .36	.38 .40	K ₂ O, std., bulk, c.l., frt. equald., f.o.b. Sask.,	44.00	45.00
blown lilm resin	40	.43ó .45	Canada	44.00 47.00	45.00
Non molding, g.p., hopper			coarse, f.o.b. Saskton gran., f.o.b. Saskton	49.00 50.50	50.00 51.50
cars, same basis ib. line wire. CATV, power cable ib. wire and cable thermoplastic high-	.45 .70	.4B 1.15	Potassium nitrate. fert. grade, atd., 50- ton c.l., divd. SE ton	267.00	274.00
voltage, natural color, same basisib.	.80	.90 .	prilled ton tech., gran., bgs., c.l., min. 5D tons,	277.00	284.00
wire and cable, XLPE low voltage, 14% carbon black, same			Potassium oxelate, neutral tech., fine gran, powd., 300-lb. dm., frt.	470.00	-
basis	.68 .60	.73 .61	equald	2.54	-
Polymyxin sulfate, USP, bulk, 50-billion units mn	.52	-	c.i., works	1.01 1.0B	-
tearale, dras., 20,000-lb. lots, works	.73	-	Potassium pentaborate powder 15c. pe Potassium perchiorate, dms. c.i.,	r ib. higher.	
Polyoxyethylene sorbitan trislearate, dms., 20,000-lb, lots.			workslb. Potassium permanganete, free flow-	.78	-
worksib. Polypropylene resin, homopolymer,	.73	-	ing, bulk, hopper trucks, worksib.	1.09	-
g.p., nat., 1.l., frt. elkdlb. copolymer, med. impact, natlb. same basislb.	.45 .50	.48 .56	50-kg. dms., same basisib. 150-kg. dms., same basisib. Potassium permanganate, USP, 50-ib.	1.20 1.17	-
high impact, same basis fb. Colored material 6c. per lb. higher for	.53	.60	kgs., works, c.l., t.l ib. Potassium persulfate, 225-ib. dms.,	1.38	-
each grade. Poystyrene resin, cryst., nat., hopper			24,000 lbs. or more, f.o.b.	78.80	_
cars, int. alid	.47	-	ci/ti same basis	72.50	-
high heat, high impact, nat., hop-per cars, same basis lb.	.48 .49	.50 .52	bgs., c.l., t.l., works, E., frt. equald 100 lbs.	43.75	47.26
expandable beads (EPS), pkging grade 1,000-lb, fots	.69	-	bulk, same basis 100 fbs. Potassium salicytate, USP, gran 200- lb. dms., 2,000 fbs. or more,	46.00	49.50
modified, same basis	.71	.73	works. frt. alld lb. USP, powd., 300-lb. dms., 2,000 lbs.	1,52	-
divdib.	1.00	1.05	Or more, same basis ib. Potassium slicate, soin., 29.8-30.2	1.42	-
lty, bos., Ll., divd	1.05	-	Be., 2.5 ratio, t.c., t.t., works 1001bs.	18.90	-
Polyvinyi chloride resin, g.p., homo- polymer dispersion, bgs., t.i., divo	EN		dms., c.l., t.l., works. 100 lbs. Potassium silicate, 40-40.5 Be., 2.1 ra-		-
g.p. suspension, bulk, same ba-	.50 .38	<u>-</u> -	tio, t.c., t.t., works 100 lbs. 40-40.5 Be., 2.1 ratio, dms., c.l., t.t., works 100 lbs.		-
pipe grade, bulk, same basis jp. ium grade, bulk, same basis jp.	.47 .37	- .47	Potassium sificate, electronica grade, 30-30.4 Be., 2.1-2.2 ratio, t.c.,	32.05	-
Polyvinyi chloride, g.p. copolymer dis- persion, same basis ib.	.58	.61	dms, c.l., t.l., works, 100 lbs.	26.10 33.10	-
g.p. copolymer suspension, same basis	.45	.49	BONG or glass, 2.15 ratio, dms., c.l.,	E2 9A	-
Potash agricultural (see Potassium must	.59 .63 .de).		works	45.00	-
Works 100 lbs.	13.00	_	"Ratio" traicates percentage by wel- percentage by weight of K ₂ O. Potassium silcofluoride, bgs., c.l., t.l.,		divided by
West Coast, 50% basis, tanks,	18.08		Potassium-sodium tertrate NE gran	.111/2	.15
reg. flake, 88-92%, 400-fb, dris, c.l., works 100 fbs. Polassium acetate, NF, gran., dms., t.l.	42.35	-	Potessium sorbate t L drag glad to	.80	1.20 3.10
Polassium bicarbonate, tech, green	.90	1.31	Potassium suifate, confortiural crede	N.A.	J. 10 -
bgs.,c.l., works	.31	V 2 -	min. 50% K ₂ O ald., bulk, c.l.,		

_			Ī	
	Potassium tetraborate, gran., bgs., c.i. worksb.	1.10	-	Ro
	Potassium telraborate powder 15c. perto Potassium thiocyanate, USP, cont	1.15 n higher		Flo
	techcrystdms1)	4.01 .62		Ros Ros
	Potassium titanate, ctns. c.l., works. b. Potassium-titanium fluoride, tech.	.71%		Ros
	Potassium-zirconium fluoride, tech	1.24	1.59	Rot
	dms., t.1., works, frt. equaldb. Prednisone USP. dms., 5 kilos or	.78		
	Prednisolone acetate LISP drea	1.03		
	Prednisolone, arrivol LISP days 5	1.12		
	Proceine hydrochloride USP antibi	1.12	•	
	otic grade, dms., 2,000-lb. lots, frt. alldlb. Procaine hydrochloride,	4.95	575	Sac
	USP, ámpulo grade, dms., 1,000- lb. lots, frt. alld	4.95	5 50	Sano Saffi
	Propionic acid, syn., pure, tanks, divd.	.35½ .33	365	Sage All
,	n-Propyl acetate, tanks, divd. ib. n-Propyl alcohol, tanks, divd. ib. n-Propyl gallate dms 100 to 2,000- ib.	53v2 42	 .M	Tu
	iots, divd	11.50		Sage Dia Sp
	500 kilos	10.80 10.36	:	Salc Salc
	Propyl paraben (see n-Propyl-p-hydroxyt Propyl thiouracil, dms., 50-kilo lots or more kilo.	98nzoate) 55.00		Suic
	n-Propylamine, dms., c.l., dlvd ib. Propylane, polymer grade, f.o.b. Tex. and La. Gulf Coast points . ib.	.75	80	US
	and La. Guit Coast points .ib. chemical grade same basisib. Propylene glycol, Indust, tanks, f.o.b. lb.	.174 .154	16	US Salol
	USP, tanks, f.o.b. E	.40 .43	ű	Sate
	tanks, divd. E	.49	٠ [Sar,
	frt. equald	4712 1.50	1.75	bu
	iotston medium, 0½-1½, bas., ton lots , ton	270.00 300.00	:	Saitti
	coarse, 2-extra coarse, bgs., ton loteton Pumice, imp., Italian, fines, bgs., ton	300.00	-	Sanda
	lots f.o.b. East Coast ton medium, bgs., ton lots. f.o.b. East	280.00	•	Sarco Schae
	Coastton	350.00 300.00		Scop
	Pyrazolone red (red 38), dms., works.	5.25	535	Sebac
	Pyrethrum flowers, fine grd. 0.9% pyrethrins, ton lots, frt. alld.lb.	1 91		Section Section
	Pyrethrum, purli., 20% pyrethrins. dms. worksb. Pyridine, reid., 2-deg., c.l., works	37.50	3775	con Senna
	tankakilo	5.90 5.70	- 1	Tin
	Pyridoxine hydrochloride, USP, 100 kilos or more, divd kilo. Pyrites, Canadian 48-50% S.	29.00	3300	p Sesar Sasa
	mines long ton Pyrogallic acid (see Pyrogallol) Pyrogallol, 100-lb. dms., 1,000-lb	4.50	500	Senn
	lots, divd	13.70	1525	GIVE Sive
			l	
	[]		j	
	W			S'ca
	Quessia chips	.57	-	9
	red.dms(rt.alidb.	20.75 17.75 21.75	242: 1 190: 1 242: 1	\$5 ca ,
	scarlet, dms., trt. alid	17.75 2.00	1900 275	Stoor
	Quinco seed, bgs	4.20	425	Street
	Quinine hydrochloride, NF, 1,000-02.	2.45	250	Sheri Sher
	Quinine sulfate, USP XVIII, 1,000-oz. dms., 2,000 oz. or more oz. Quinoline, dms., Ll., irt. equald ib.	2.30 1.49	250	Sospo
	tanks, same basisb.	1.43		Soda a
				\$0 \$0
	K		1	Sode o
		2.12	•	73
	R selt tech., 304 molecular wt ib. Recemethionine, USP. 50-250 kilos	6.80	•	16
	250-500 kilos kilo	6.60 6.50 1.07	•	: Pan
	Repeased oil, dms	.581/2	.872	bead Proper
	Cms	22.00 (0)		·
	Reserpine, USP, cryst., bots., gram.	.40	AFI	Soda Sodan
	Resorcinol tech., bgs., t.l., works. dlvd	3.66 9.35	•	Solum
	powd. dms., same basis kilo.	9,90		Socie
by	IDS. OF ITIOTE.	1.98 9.25	· (. •)	Godum
	tungstated, PTMA, dms., f.o.b.	11.60	1400	
	Rhodinol, 25-lb. cns	15.25	5	800m
	powd. bgs.	, 61 ALED		Mar.
	man a company trans albed kilo:	83.50	40	100
	Ribolisyn, USP, 25 kads, drag, 26- Ribolisyn 5-phosphate-sodium, 26- kilo lots.	138.00	第1 1 表数:	
		1.1.45	<u> </u>	

	والمرابي المرابي
ce bran oil, refined dims. t.l ib. 1.25 — Idrolek add (see Castor oil acids, split).	Sodium bicarbonate, USP, powd., reg. grade, bgs., c.i., t.i., works, frt.
chele sall (see Pollassium socials in the trans-	coarse same basis 100 bs. 17.05
odro price less communications of to. 24 ol. nat., NF, Bulgarian, of to. bots	O'an., same basis 100 bs. 17.20
Manary oil, NF, Spanish, Oma	Sodium bichromate grap, bos c l 1
Menone resin, 30-46%, 100-lb. dms. works	works, frt. equaldib57 Sodium billuoride, 400-lb. dms., cl.,
Hotes	frt. equald
A	Sodium bisuifite, anhyd, hos of the
	Works, West 100 hs. 28.50
y	basis, works Feet 100%
chann NF, gran., soluble, drns.	photographic grade, 43% solo
1,000-lb. 1019, 171. 2011 10. 2.00 2.75	Sodium borate NF gran bos 61
rhan 20,000-to, tota, frt. alld lb. 3.75 – Roser of, non-break, tenks, N.Y lb. 55 – shink ofms. N.Y., dlvd lb	bowd. same hasis
Albedms, N.Y., dlvd lb	1000-5000 by works to so
untain	Sodium borohydride, stabilized water soin., 12% NaBH, 100% basis.
igmatian, cns	3000 gal. tankwagon, works. b. 17.45 Sodium bromide, 99%, gran., 400-ib.
cylaidehyde, tanks, f.o.b lb. 3.60	dms., f.o.b. works
2,000-tb. lots, one ship lb. 1.07 1.10 cylic scid, tech., dms., c.l., t.l.,	Sodium carbonate, cryst monohydrate (see Soda Sodium carbonate, monohydrated,
works	bgs., c.l., t.l., works ton 392.00 Sodium carboxymathyl cellulose (see CMC.)
More	defivered, N.E. top 330 co
more	Sodium chlorate, cryst. 450-lb, down
evaporated, common, 80-lb, bgs., cl., 1.L, North, works 80 lbs. 4.02	Sodium chloride tech /eco Sott
bulk, same basis	Sodium chlorite, tech., dms. c.l. 29
sis	Sodium chromate, snhyd., drns., c.i.,
cake, dom., bulk, works, 100% N,80, basis, f.o.b. works E ton 65.00 98.00	Sodium chromate, tetrahydrate, bos
mahasis W	C I., I.I., works
Indonesia	dms., c.l., t.l., N.Yib. 1.95 Sodium citrate, USP, gran., dihydrate,
equation	100-lb. bgs., t.t., f.o.b. ship- ping point
polanijae hydrobromide, USP,	worksib85 Sodium cyanide, briquettes or gran.
100-oz. fots bots oz. 36.00 46.50 accadd CP, bgs., c.l., works lb. 1.95	99% min., 200-lb dms, min.
ard bgs. c.l., works b. 1.94 Fix marture, drns., 5,000-lb. lots. b. .301/2	works.
avid	t.l. dvd F of Bookies in st
na reives, Alexandria, whole and	c.t., works
Powd obla bxs ID 70 71	Sodium erythorbate, powd., gran., i.i. or mixed t.i., i.o.b. shipping
and seed, Central American	point
nuled, ogs	Sodium ferrocyanide, bgs, t.l., works
10.0809rbns 1c.1 works 15	t.l., works, irt. equaldib. 1.77 Sodium fluoride, white, 97%, 400-ib.
3. Smorph. Gry-Grd. bgs., c.f., works 93%, 200 mesh tori 31.00 32.50 33.50 33.50 33.50	dms , o.i , works, frt. equald lb
985% 205 meets ION 34.50 35.50	USP powd., 200-lb. dms., t.l.,
a drypd box cl works 00 00	Sodium primate, bgs., c.i., works ib
995 under 15 microns 15 microns 72.00 75.50	2,500 lbs. or more frt. alldlb60 Sodium hydride, oli dispersion, 60%
99 under 10 10n 79.50 82.50	NaH, 167-lb. dma., 10 dms., works
1. hard-quartz, 99.5% SiO ₂ , 325	Sodium hydrosulfide. (see Sodium sulfhydrate.) Sodium hydrosulfite, dms., c.l., t.l., f.o.b. shipping point E ib,
mesh bgs., c.l., works ton 37.00 - 140 mesh bgs., c.l., works ton 34.75 - 140 mesh bgs., c.l., works ton 34.75 - 140 mesh bgs., c.l., works	f.o.b. shipping point E ib
works,	equaldib95 Sodium hydroxide, tech (see Soda, causic.)
Cyangia (file), An Pool 1971 UZ D. 1955 —	Sodium hypophosphite, EN grade, 300 lb. dms f.o.b. workslb, 1,425
Manuel Troy Oz. AG/	110 lb. dms
MG, Mg, 1.00 _	Sodium lodide, USP, cryst., 300- to 500- lb. lots. dms. frt. equald lb. 14.72
bos cl., works, f.o.b ton 120.00	Sodium lauryi sulfate, 30%, tanks, (.o.b. works
15%, 100-lb., paper bgs., c.l.,	Sodium lignin sulfonate, bgs., c.l., works
Causic In Sec	Sodium metaborato, cotahydrate, gran., bgs., c.l., worksb38
Guif Coast works, Lo.b., frt	tetrahydrate, gran, bgs, c.l., worksib49
10% MILE	Sodrum, metamo, 12-lp. bricks, dms.,
70%,700-lb.dms, c.l. 500.00 670.00	c.i. worke
WORKS.	tanks works
	o.l., f.o.b. shipping pt. frt. equald
bests for solid, and \$20-\$30 top blobes for West 70c.	Sodium meterificate enhañ bre 61
tel conc., bas. c.	Sodium metasilicata, arhyd., bgs., c.i. works
	pentahydrate, bgs., pl., f.o.b. ship- ping point 100 bs. 18.95
h dead 100	Sodium molybdata, anhyd., dms. 1,0,0.
the see NF, white record	works, 100 lbs and over lb. 4.87 Cryst., dms., t.i., same basis lb. 4.12
b. lots or more 100	Sodium naphthlonate, dms., e.l., t.l., f.b. 2.00
m seconds, age, c.i., dwd. F. Ib. 4.73	Socium Nitrata, USP, bgs., c.l., 1.0.0., Int. squald 100 bs. 34,50
Difference Laboratory Laboratory	Sodium ninite, dom. industrial, 20s., o.l. works
Highway II	Imp., comt., 100-lb, bott., 6.1., All., or
Marine Inc. Marine	bulk, c.l., same basis. ton 182.00
P. das, and basis b	imp., Sgricultural, bulk, c.l., same basis
lb92	Socium nitrite, USP, drijs, b.J., works, int. equald

		hos of western annya.				_
.05 .05	-	bgs., c.i., works 100bs Sodium orthosilicate, tech., hydrated		-	CHEMICA	ī
.20 .85	-	flaks, dms., c.l., works. 100 lbs bgs., c.l., works. 100 lbs		-		l
.60	-	Sodium oxelate, 99%, bgs., t.l., works. b Sodium pentachlorophenate, beads		-	ALIPINA	L
.57	-	bas.	67	_	PRICES	
.78 .76	-	Sodium periocaroital (see Pentobarb)	tal-sodium).		II DRII - L C	
.00	-	Sodium persutate, 225-b, dms 24 occ	327	± .36⅓	HLUIAFA	
.50	_	55-lb. bus same bests	· .63W			_
.00	Ξ	Sodum phenoulforate pour drag its	ital-Sodtum).	WEEK ENDING OCT 31, 1986	
.60 .00	-	tech, bas. cl. tl. works for	:	-	Sorbitan monostearate, dms., c.l., t.l., 30,000 lb. min., f.o.b.	
	-	food grade same back 100 lbs	54.50	-	Works	-
90	-	Sodium phosphate, monobasic, tech. same basis 100 lbs		-	min., f.o.b. works ib 80 Sorbitol, USP, reg. 70% aqueous,	_
51 52	-	food grade, same basis, 100 lbs tribasic, tech., same basis, 100 lbs	59.75		I 9MS., C.L., f.O.b. skipping	
88	21.90	chlorinated, same basis, 100 lbs	63.25	52.75 -	point	_
		cryst., tech., same basis. 100 lbs cryst., food grade, same ba-	On to	Ξ	gran., dms., c.l. t.l., workslb70 powd., dms., c.l., t.l., workslb68	.7 .7
45	-	I 218 100 Ben	OF FA	-	Soybean meal (See Oils, Fats & Waxes market report.) Soybean oil (See Oils, Fats & Waxes market report.)	
04	-	USP, dried, powd., bgs., dms., works	40	.2012	95% acid. tanks. New York ib.	.1:
00 oda,	ash)	Sodium picramate, tech., paste. 200- ib. dms., dry basis, dvd ib.	E 60	_	Soybean oil, acid, dbi., dist., dnns	.5
, 00		Sodium propionate, dma., 2,000 lbs. or more, f.o.b. frt. alid lb.	64	_	5.Q., QMS	.5
•	-	G.L. works frt erusel 100 km	F0 0F	_	Spenmint eleves, imp., bis b. 2.50 2	.4: 2.7(
20	-	works, frt. equald. 100 lbs.	81 OF	_	MICHARS DESIRE 10 00 10 00 10	8.01 2.01
)O	-	G.I. I.I. works		_ n _	I MIGWEST, SCOTCH IN 14 EA 4E	5.51 5.21
27	-	Sodium pyrophosphate, tetrabasic, anhyd., tech., bgs., c.l., t.l.,		-	St. John's bread, edible, bls. 50	30
<u> </u>	-	works, irl. equald 100 lbs. bulk, hopper cars, same ba-	44.75	-	works	_
7	1.27	sis	42.50	-	Stannous chloride, anhyd., dms. wks. Ib. N.A.	_
37	-	I 319 100 the	53.00	_	Stannous ruobonate, liq., conc., dms.,	-
34	-	Sodium saticylete, USP, cryst., 200-ib. drns., 1,000-ib. lots or more.	_		Stannous sulfate, dms., works lb. N.A.	_
5	-	works, frl. equald lb. USP, powd., 200-lb. dms., 1,000-lb.	3.00	-	ateancacd, double pressed, bulk . ib. 28	.39
41/2	_	Sodium sesquicarbonate, bulk, c.l. + 1	3.05	-	i triple-pressed bulk in 22	.40
5		WORKSton.	170.00 198.00	-	I Streptomycin sulfate. USP, bulk kilo 47 na.	.20 -
	-	3.25 ratio, bulk, c.l., t.l.,			Strontium carbonate, glass grd., bgs., 1.L., works	_
1	-	bgs., c.l., t.l., works. 100 lbs.	15.70 27 75	-	Strontium nitrate, 50-15 bgs., c.l., works 100 bs., 51.50	_
8	-	1.85-2.00 ratio, bulk, c.i., t.i., works. 100 be	20 30	_	Styrene monomer, 99.6% min., t.c., t.l., f.o b. works	.27
1	.67	bgs., c.l., t l., works 100 lbs. soln., 37.6° solid, 3,22-3,25	22.15	_	Styrene-acrylonitrile resin, nat., bulk,	_
2	-	ratio, bulk, c.l., l.l., frt.	6.30		Clear same basis	.81 .81
	0.05	"Ratio" indicates percentage by we percentage by weight of Na ₂ O.	ght of SiO	divided by	Styrol scatate, drns	-
U	2.85	Sodium silicofluorida, bgs., c.i., 1.1., works, frt. equald 100 lbs.	17.95	19.75		.10
0	-	Sodium stannats, dms. wks. frt. alid. E.ib. Sodium suffanilate, dms. works	N.A. .22	-	work	
7	-	Sodium sulfate, NF XII, powd., dms., 2,000-lb. lotslb.		-	refy. E	-
345	-	tech., detergent, rayon-grade, c.l., works. Gulfton	.231/2	-	dms., t.l., divd	-
,	-	Sodium sulfate, West, bulk, c.l., works, frt. equaldton	90.00	96.00	100%, dms., t.l., divd b. 1.18 Sucrose octa-acetate, denaturing	-
í	Ξ	bulk, cl.l, East, same basis ton Sodium sulfate, photo grade, 100-lb.	90.00 113.00	101.00 114.00	grade, 100-lb. dms., l.o.b.	en.
)	-	bgs.,ci., works ton Sodium sulfhydrate, flake, 70-72%,	47.00	53.00	Sulfabenzamide, dms., 500 kilos. kilo. 39,50 Sulfabenzamide-sodium, dms., 500	
		ams., c.l., works, frt.	E00.00		kilo. 25.00 - Sulfacetamide, USP, dms., 500	
•	-	equaldton	500.00	-	kilos	50
ļ	-	equaldton Sodium aulfide, fiake, dms., c.l., works,	600.00	-	[kijos kijo 53.00	
		E., frt. equaldton bgs., same basiston	470.00 410.00	=	Sulfadiazine-sodium, USP, dms., 500 kilos	
•	.98	Sodium suifide, fused, dms., c.l., works, E., in. squald, ton	240.00	_	Sulfamerazine, USP, microcrystata, dms., 500 kiloskilo. 33.50	
5	1.60	Sodium sulfite, anhyd., tech. 95-100% bgs, f.o.b. works 100 lbs.	23.76	_	USP, powd., dms., 500 kilos kilo. 32.00 - Sulfamethazine-socium, USP, powd.	
'	1.52	Sodium sulfocyanida CP (see Sodium this Sodium tetraborate (see Borax).	ocyanale).		drs., 50 kilos kilo. 13.00 – Sulfamethazine, powder, drss., 500	
	_	Sodium tetrasulfide. Ilq. 34%, dms., c.l., works., frt. squald ton	540.00	_	Suifamic acid, cryst., bgs., c.l., t.l.,	0
	.32	Sodium thiocyanate, purif., cryst., 250- lb. dms., 5 dms. or more				0
	_	tech., anhyd. dms., 2,000 lbs. or	3.26		works	
		more, works	.97	- 4	Suranec acid, tech., bos., Li., f.o.b.	
	-	anhyd., 100-lb. bgs., c.f., t.l., works.frt.equald100 bs.	45.50.	[works. 1b. 671/2 Sulfaquinoxaline, veterinary, grade, dms., 8.00	. •
١,		Cryst. pentahydrate, c.i., t.i., same	28.50		· Surur, Cruce, Origin, Incident dicent for h	•
٠.	-	Sodium titarhate, dms., c.l., worksib. Sodium triphlorospetate, 95%, 50-lb.	.14%	- 1	Lo.b. La. refy	
	- .80	bgs., c.f., fri. alid, E , ib. Sodium tripolychosphate, tech., bcs., n l .	28	- 1	exterminal Rotterdam long ton 125.50	
	•	't.l., works, irt, equald 100 lbs. bulk, hopper cars, same basis, 100 lbs.	39.75 37.50	- 1	1.0.0. tanks, Alberta, Canada, for US delivery	
	-	food grade, bgs., c.l., t.l., same ba- sis	48.50	_	dark, ex-Tampe, Fig long-ton . 157.50 Sulfur, crude, 99.5% min. purity, comit.	:
•	* A	Sodium tungstate, tech. high moly., dma., 10,800 lbs. or more, int.		. [flour, 50-lib. bgs., c.t., mines besis	•
	-	aldb. Foin grade dms., 10,800 lbs. or	5.00	5.60	N/mp, same basia 100 lbs 13.60	
	_ :	imore, same basis ib. Sodium-animonium phosphate, purif.,	8.00	-	50-10. bags, c.f., mines ba- 100 bes 17 co	Ţ.
	-	cryst., dms., works fb. Sodium-formaldehyda sulfoxylate,	.52	· -	IKM, #gm, bU-Ro. bgs., same bg.	
:	- /	dme., t.l., 1.o.b. worké, lb. Sodium-zirconyi suliste, dme., 1,000-	.91	- 1		
ja Lynn	(N)	The local destruction and the local destruction is a second of the local destruction and the local destruction is a second of the local destruction and the local destruction is a second of the local destruction and the local destruction is a second of the local destruction and the local destruction is a second of the local destruction and the local destruction is a second of the local destruction and the local destruction is a second of the local destruction and the local destruction is a second of the local destruction and the loca	28 16	: 1	min purity, 50-lb. bgs, c.i. mines basis 100 bss. 28 00 Sulfur, rubbermeiters, 99,5% min, pu-	.÷
11.	27	arcimatio, b.r. 320°-350°F,			nty, come, reg., 50-lb, bgg., Q.L. mines basis. 100 ibs. 14 60	
20	2.00	58°F m.a.p./tanks: New Jersey	1.52		fine, 98% min. passing through 325 mesh, same basis : 100 lbs. 15.60	•
	2.00	Houston gel	1,41 1.54		Sumur dichloride, dims., c.1, works, frt.	
214	4.00	Solvent naphthe, petroleum, straight aro	matic, b.r.	360°F-	tanku, same basis jb. 1744 Sultur dioxide, sq., bulk, t.o., i.t., f.o.b.	7
10.		New Jersey	1.80	1.30	Sulfur monochloride, drise, c.l., works,	i .
		. British Color Color Color Color Color	1.30	1.35 3.10	frt. equald	
â.		November 3, 1986			AL MARKETING REPORTER	<u>.</u>
	and the second	200 OK 100 M C 27 TO TO THE SECOND	- 1 - 1 - 7			υÜ

	WEEK ENDING OCT 31	, 1986	
	Sorbitan monostearate, dms., c.l., t.l.,		
	30,000 lb. min., f.o.b. works	.76	_
	I INITE. I.C.D. WOYKE IN	.80	_
	Sorbitol, USP, reg. 70% aqueous, dms., c.i., f.o.b. shipping	_	
	pointib. tanks, I.o.b. shipping pointib.	.35 .30	_
	gran., dme., c.i., t.i., works lb. powd., dms., c.i., t.i., works lb. Soybean meal (See Ols, Fats & Waxes	.70 .68	.74
	I OUVUBEIDDICARA (NA FRIG Z UVSvas 🐟	market report	ort.) l.)
	Soybean oil acidulated, scapstock, 95% acid, tanks, New York ib.	14	-18
	Soybean oil, acid, dbi., dist., dnns	.48	.59
	5.C., OMS	.43 .47	.44 .58
	tanks	.38 2.50	.43 2.70
	Spearmint of, Far West, native In	14.00	15.00
	Midwest, native	10.00 15.00	12.00 15.50
	I MICHAEL SCOTCE IN	14.50	15.25
	Spruce oil, dms	8.00 29	.30
	works annya., ams.,	N.A.	
i	i Statilic Oxtora, dina worke is	N.A.	_
	Stannous chloride, anhyd., dms. wks lb. Stannous fluoborate, liq., conc., dms.,	N.A.	-
	11., works, frt. equald ib. Stannous oxide, dms., works ib.	2.50	-
	Stannous sulfate, dris., works, Ib	N.A. N.A.	-
	Stearic acid, double pressed, bulk . lb. single-pressed, bulk lb.	.26	.39
	i tripile-oressed, bulk ib	.28 .32	.37 .40
	Streptomycin sulfate LISP bulk kilo	.15 47.00	.20
	otromitium carbonate, glass grd., bas.		-
	11. works	3714	-
	works 100 lbs. Styrens monomer, 99.6% min., t.c.,	51.50	-
	Styrene-acrylonitrile resin, nat., bulk.	.22	.27
	f.o b. plant	. 7 7	٠.
		.77 77	.81 .81
	Strocinic acid puril court does 16.	2.35	-
ı	Succinicanhydride, dms , c.i., t.i., f.o.b.	200	2.10
I	work	1.71	~
I	refy. E 100 ibs. Sucrose acetate, isobutyrate, 90%	33.10	-
ı	oma., t.l., divo	1.18	_
ı	tanks, clvd. b. 100%, dms., t,l., dlvd. b.	1.10 1.18	-
l	orade, 100-in, denaturing		
ľ	works	12.50	13.50
ı	Suracenzamide-sodium, dins., 500	39.50	-
l	kilos	25.00	-
	Sulfadiazine, USP, powd. dms. 500	20.00	23.50
•	Sulfadiazine-sodium, USP, dms 500	53.00	-
	kilos	40.70	-
	dms., 500 kilos kilo. USP, powd., dms., 500 kilos kilo. Sulfamathazina-sodium. USP . powst	33.50 32.00	-

November 3, 1986

WEEK ENDING OCT 31, 1986

	95 90
75.00	86.40
80.25	
68.15	_
	_
	7767 and
Mark was	n oleum a
ا 100 الماليان 100 الم	
minimbia na	1,043.
.s,	
48.00	52.00
	25.GO
83.15	-
60.00	65.00
.16	.16%
2 75	3.05
	165.00
160.00	100.00
	68.15 65.00 multiply by 20% fumin multiply by 38, 48.00 20.00 63.15

bulk, gran .c t. Fla ton	160.00
	ست سعب
Tale, dom, grd New York bgs., cl., works	84.00
99 5% 325 mosh, bos., c i .	

Tale, dom, grd. New York bgs., c l.,		
works	84.00	_
99.5%, 325 mosh, bgs., c l .	•	
works	84.00	90.00
works		
cronized, bas., cl., works ton	187.00	238.GO
625 mash, micronized, bgs.,		
c I , works ton	200.00	-
dom., ord., Calif., grd., bgs., c.l.,		
dom, ord., Calif. grd., bgs., c.l., works	90.00	-
ord., Vermont, off-color and bas .		
ord., Vermont, off-color grd , bgs ton	136 00	-
imp , Canadian, grd , bgs , C l.,		
works	70.00	64.00
works lon Tall oil, crude, Southeast, tanks,		
works, fri. equald ion	90.00	100.00
Taff oil, refd., acid, same basislb	.31	
dist itanks same basis	19	.23
Tall oil acids, 2% or more rosin, tanks.		
works fit equald lb	.2012	
less than 2° rosin acid Ib	.22	.27
Tallow (see Oils, Fats & Wavesmarket r	eport.)	
Tallow, fatty acids, lech , non-ret		
dms.cl.divd	.37	.40
tanks divd	29	45
hydrogenaled, tech , flake, bgs., c l .		
divd lb	.37	.33
tanks.divd	.35	.42
Tangerne of Fla, dms f.o blb.	8.50	9 50
Italian dms kdo	52 90	-
Tankage, animal feeding, 9-11%, NH ₃ .		
New York, bulk und ton	5.50	
Tankago feri grade (see Nikoganous)	3100855187	kaga).
Tannic acid, NF, flutfy, bbls., 1,000-tb.		
lots	6.09	-
techpgwddms	4.62	-
Tar acid oi 15-18° - ti, dms., i.o.b		
vrorksgal.	1.40	-
25-28%, U., dms . (.o.b. works . gal.	1.59	-

tanks divd	29	45	
hydrogenaied, tech , flake, bgs., c i			٦
divd	.37	.33	1
tanks, divd	.35	.42	
Tangerne of Fla. dms f.o blb.	8.50	9 50	٦
Italian dms kdo	52 90	- 1	-
Tankage, animal feeding, 9-11%, NH ₃ ,			
. New York, bulk unit-ton	5.50	-	
Tankago, fert grade (see Napoganous pro-		set.	•
Tannic acid, NF, fluffy, bbis., 1,000-tb.			
ble h	6.09	_	ŀ
tech., powd., dms	4.62	_ !	
Tar acid oil. 15-18% til, dms., Lo.b			ì
	1,40	_	ı
worksgal. 25-28%, U., dms , 1.0.b, works. gal.	1.59	_	ı
EO EST: 11 date 1 o b works on	1.87		١.
50-53%, 11, dms , 1.o.b. works , ga).	1 20	1.50	l
Tartaric acd, NF, bgs	12.00	1.00	1
Tellurium metallurgical, Lo b works 1b.	12.00	-	l
Terpin hydrate, NF, imp , cryst., powd.,			l
36 kilo drums, f.o.b ship. pt.,	4.05		L
frt. equald	1.35		ı
Terpmedlb.	1.10	1.50	١
Terpinyl acetate, extra, drns lb.	2.40		ı
pnme dmsb.	1 35	2.05	ı
Terpinyl propionale, dms	4.50	-	ι
Tetrachloroethylene, tech. (see Perchloro	sethylene).		1
Tetrachloroetkylene. USP, dms., c.i.,	-		ı
f i , works	.30%	-	ı
Tetraethyl orthosiucate, bulk, 1.o.b.			١
workslb.	1.53	1.66	ı
Tetraethylene glycol, tanks, fri. alid. Ib.	.67	-	ı
Tetraethylene glycol diacrylate, t.l.			١
dms., i o b. works,	1.50	-	1
Tetraelhylenepentamine, tanka, same			1
bāsislb.	1.70	1.75	1
Tetraethylthuram disullide, tech.,			
(take, dms , t.l., frt. alki Ub.	.68	2.07	
Tetrahydrofuran dms., c.i., tl., f o.b.			1
works	1.02	-	
tanks, same basis lb.	.96	-	
Tetrahydrofurfuryl alcohol tanks, f.o.b.			
Memphis, Tenn	.90	-	
Tetrahydrovinskogi, sym., drys lb.	7.20	-	
Tetrahydrophthalic anhydride dms			
ci, ti fa b. works lb.	.65	-	
Tetrapolassum phoaphate (see Potassium	n phosphate	, tetrabasic)	
Tetrasodum pyrophosphate (see Sodi	um pyroph	osphate, i	
tetrabasic i		-	
Thallsum metal, divid	35.00	-	
Thaitum sullate, 99%, bots , divd, kilo	140.00	-	
Theobromine, bulk flo b. works lb.	4.00	4.50	
Theophyline, USP, anhyd 50-kilo	- -		
dms., 10,000-kdo lots kilo	12.00	12.95	
Trivamine hydrochlonde, USP 100- kilo		-	
dms., divd	27.00	31.00	
Thiamino mononitrate, USP, 100-kilo.,			
dres divel . kilo.	27.00	31 00	

dms dwdkilo. Thiodiphanol, 98%, dms., f.o.b.

Thiolism green toners, molybdated, PMA, dris. 1b. tungstated, PTA, dris. 1b. Thiogistated, PTA, dris. 1b. 100% acid basis. 1b. Thionigoldinarion, dris., it. alid. lb. redd, time for alid. lb.

reds, das fri alld. lb. Thronyl chonds, high-purity, 99.6%, 24,000-lb min. 11. das. fri.

	<u> </u>			,
	Thorium nitrate, puril., dms., 100-lb.			Ţ
11	Laicarmare Warks 10.	.75 .00	_	'
11	Thorne leaves, French, bos Ib.	.45	- \	•
H	George Hose	.75).00	-	
11	NF white dms	2.00	1.15	1
П	Thyrnol, NF			Į
łł	WANTED .		3.20	•
H	Tin metal (NY composite) ib. Titanium doxide, anatase, bgs., 20-	N.A.		
Н	toriots. (17. 8)(Q	.77	.79	١
П	siurry shipments, 50-toniots, dry ba- sis, frt. alid	.78	-	ı
┛╽	Thenium dioxide, futile, reg., ogs., 20-	.81	.84	
	tonicts, frt. alldlb. slumy shipments, 50 ton lots,	.84	_	
	dry basis, irt. alki lb. Non-chalking ruite material costs 1 c. per p	.04 Sundmore.		ŀ
	Titarilum hydrida DOWO. Glectronics	8.50	_	•
nd	Thanlum tatrachionide, tech., bulk, C.L.		<u>.</u>	
13	f.o.b. works	.30 .50	.35	
	Titonium enonge, 99,3%, Noer crums,		l	1
	l less than 5,000 lbs. r.o.d.	4.85	- 1	
	Tables add 2.000 lbs. or more	2.45	-	
	d-a-Tocopherols, 67%, dmskilo 5 d-a-Tocopheryl acetate, 61% conc	0.08	_	
,	l dms	7.4 9	-	
		8.44	-	
	di-a-Tocopherol dins	7.40	-	
_	dm. 1000 kilo min		0.50	l
	I 50% dru nawd., 50-kilo dm Kilo 1	7.00 7.60	e.68	ı
	Tolu balsam, cns	.70	_	1
	Atlante, Ga., divd	.70	-	ļ
	i Plaumyn Tex. J.o.b 981.	.70 .70	-	ì
_	Chicago, III. clivd gal. Clarton, Pa., 1.o.b gal.	.70	-	l
_	Deer Park, Tex., f.o.b gal. Ft. Wayne, Ind., divd gal.	.70 .70	-	١
	Guil Coast, apol, barges gal.	.65	.67	l
	Hauston, Tex., divd gal. New Jersey Metro, divd gal.	.70 .70	-	١
	Philadelphia, Pa., divd gal. Providence, R.I., divd gal.	.70 .70	-	ı
	Toluene di leccyanate (mixed leomers).			١
	BO%, 2,4-and 20% 2.6-Isomers, jumbo tenkcare, divd lb.	1.01	_	ı
	p-Toluenesulfonamide, powd., dms.,	3.55	_	١
	t I., works	3.10		١
	o-Toluidine, tech., fiq., dms.cllb. bulk, same basislb.	.72 .60	75 64	١
ı	p-Toluidine, tech. cast solid.dms.,			ı
	ci.,worksib. Liq., tanks, same basisib.	1.80 1.70	1.85	١
	flake, same basis	1 95	-	
W ₂	C.1 10.0. WOTES	1.03	-	
	bulk same basis	.95	-	
	Cincinnati Ohlo	2.90	-	
,	Tonka beans, Angostura, prime, 1,000-ib.lotsib.	6 50	-	
	Toxaphene, dms., c l., t.l., works lb. Tragacanthgum, No. 1, ribbons, cns. lb.	.38 38 00	40.00	
	traked powder	12.50	15.00	
•	Triacetin tanks, dvd. E	.75	-	
	works	1.70	1.77	
	Tributyl phosphate, tanks, works ib. Tributylamne, dms., c.l., dvd ib.	1.65 1.39	1.77	
	tanks, same basis	1.33	~	
	drns., c.l., f.a.b., works lb.	.94	-	
	USP, 100 ib. dms., int. equald ib. 1,2,4-Trichlorobenzene, pure, tanks,	.991/2	•	
	divdib. 1,1,1-Trichlorgethane, tanks, con-	.61%	•	
0	sumers, divd	.401/2		
	1,1,2-Trichloroethane, tanks, f.o.b.	.42		
	Trichtorosthylene, tanks, divd lb.	.381/2 1.25	-	
0	Trichforosocyanumic acid, dms lb. Trichforophenoxya.catic acid (see 2.4.5-1		-	
)5	Tricholine citrate, 65%, soin., non- ret. dms., 1,500-lb lots, divid ib.	1.35	_	
_	Tricresyl phosphate, tanks, i.o.b.		4 70	
	Tridecyl alcohol, mixed isomers, tanks,	1.60	1.76	
,	Triethonolemine, 85%, tanks, divd. E. Ib.	.57 .45	.48	
66	99%, tanks, same basis ib.	.45	.48	
•	Triethanolamine lauryl sulfate, tanks, (.o.b.works	.274	.274	'n
-	Triethylamine, dms., c.l., divdlb. tanks, same basislb.	1.33	-	
75	Triethyl citrate, t.l., drums, f.o.b.,		-	
.07	Triethyl phosphate, tanks, dvd lb.	1.82 1.15	-	
-	i netnytena giyoot, tanks, t.o.b. Guit jb.	.47	~	
_	Triethylene glycol dipelargonate, lanks	.294		
_	40-80% tanks, 100% basis, frt.	.35		
-	Triethylenateirumme tanks, frt. equald, fb.	1.43	1.45	
-	Tri-lso-tolyl trimelitate, f.o.b. works to. Tri-lsobutylene, tanks, divd lb.	.45	.55 	
ibas 810.	ic). Tri-isopropanolamine, dms., c.i., frt.		2 –	
	Trimethylamine, anhyd., tanks, frt			

·					
				70	
in the state and does 100-lb		1	Turmeric, Ateppey over 6% lb. Turpentine, crude suitate tanks, f. o.b	.70	
ium nitrate, puril., dms., 100-ib. loisor more, worksib.	2.75	-	Southeast works gal.	.70	.80
recnine dims 10 kilos Wk\$Kilo.	128.00 1.45	-	والمستريخ والمستران والمستريخ والمستريخ والمستريخ		
me leaves, French, bgs lb. panish, bgs lb.	.75	-			
ne oil NF, red, dris XXX	20.00	- 1			
F white dms	22.00 3.75	6.15			
mollodidadims.100-lb\$ 1.0-0.		E0 00	U		
works	52.30 N.A	56.20		البنباري	والسوي
metal (NY composite)]	Ultramarine blue pigments, 550- 2,000		
terested & tet mild	.77	.79	III Jole Works	1.30 2.20	-
urry shipments, 50-ton lots, dry ba- sis, frt. alid	.78	-	violet, same basis		
nium dioxide, nutile, reg., ogs., 20-	04	.84	equald	.131/2	1517
tonicts, frt. alidib. siumy shipments, 50 ton lots,	.81		raw, American, dom., bys., i.c.,	.1312	.1431
da kasis izi aliri ID.	.84		Upotomicado dins. Wolks ID.	2.70	-
no-challang ruide material costs 10. Pt	ы ролиотог	e.	Three Area N. Inc., bulk 20-ton C.	200.00	220 00
grade, drns	28.50	-	AGO, N. soricultural, bulk, blvd, Mid-		015.00
mium teirschioride, tech., bulk, c.k.	.30	.35	west ion a	200.00 210.00	215.00
f.o.b. works	.50	-	Uva-Ursi leaves, bis	.22	-
mium spange, 99,3%, fiber arums,				نبصنعي	
less than 5,000 lbs. f.o.b. wks	4.85	- :			
sian acid. 2.000 lbs. or more ID.	2.45	-			
Tocopherols, 67%, dms killo	50.08	-			
-Tocopheryl acetate, 81% conc cmskilo	57.4 9	-			
"Tocochervi scici succinale, cryst	70 44	_			_
cmskilo Tocopherol, dmskilo.	78.44 27.40	_	Vaterian root, Belgian, bgs lb.	.65	.85
a-Tocopheryl acetate, USP 50-kilo		10.50	Indian bgs	.45	-
dm. 1000 kilo min	16.00 17. 00	18.50	L cyls works	5.40	-
50% dry powd., 50-kilo dm kilo lu balsam, cns lb.	7.60	83.6	I Vanadium pentoxide, tech., gran., per ib.	4.10	4.94
luene, petroleum, ind. or nitration, tari	.70	_	oi V ₂ O ₄ , 550-lb. dms., works lb. fused or flake, per lb. V ₂ O ₅ , 550-		
Atlanta, Ga., divd	.70	-	ib dms , works ib.	3.35 27 4	3.65
Baytown, Tex., I.o.b gal.	.70	-	Vandyke brown, bags., tl., frt. equald. lb. Vanilla beans, Madagascar lb.	37.00	
Chicago, III. clivd gal. Clarton, Pa., (.o.b gal.	.70 .70	-	Java tins	27.00	30.00
Deer Park, Tex., f.o.b gel.	.70	-	Vanillin, USP, dms., f.o.b works lb. imp., dms	6.25 4.75	5.00
Ft. Wayne, Ind., divd gal.	.70 .65	. 67	Versioni Ari	.64	-
Guil Coasi, apol, barges gal. Houston, Tex., divd gal.	.70	_	Vetiverylacetate drns kilo extra	60.50 63.00	-
New Jersey Metro, divd gal.	.70 .70	=	Vetiver oil Bourbon, dms	49.00	-
Philadelphía, Pa., divd gal. Providence, R.I., divd gal.	.70	_	Chinese	18.00 26.50	-
luene di leccyanate (mixed isomers).			Java kilo	34.00	-
80%, 2,4-and 20% 2,6-isomers, jumbo tankcars, divd lb.	1.01	_	Victoria blue toners, molybdated, PMA dmsib.	6.20	6.30
Toluenesulfonamide, powd., dms.,			tungslated, PTA, dms ib.	10.40	-
t I., works	3.55 3.10		Vinyi acelate monomer, tanks, divd. lb	.39	-
rolluidine tech., fig., dms.clib.	.72	.75	Vinyl chloride monomer, polymer grade tanks, to b. works lb	.28	-
bulk, same basis	.60	.64	Vinyl einer, USP, anesthegia, 75-cc.	1.56	_
Toluidine, tech. cast solid.dms., cl.,works	1.80	1.85	bols, hospitalsbots. 2-Vinyigyridine t.l., dms. workskllo.	7 81	
Liq., tanks, same basisib.	1.70	-	tanks works kilo.	7.61	.731
flake, same basis	1 95	-	Vinyltoluene, bulk, f.o.b	.67	./3
c.1 10.b. works 1b.		-) Auhils per qm , 50-kilo lots . Kilo	33.00	-
bulk same basis		-	Vitamin A. Iq. in oil, pharm . 1,000,000 A units per gram, 10 kilo lots kilo	41.00	_
Cincinnati Ohlo	2.90	-	Vitamin A. feed grade, 650,000 units		, pa
onka beans, Angostura, prime,		_	per gm	. 18.70	23.85
1,000-lb. lots lb. exaphene, dms., c l., t.l., works lb.		Ξ	Vitamin B _{ix} (see Ribotlavin	and Yeas	1).
agacanthgum, No. 1, ribbons, cns. lb.	. 36 00	40.00	Vitamin B ₁₂ , cryst., non-sterile, USP		
flaked powder	12.50 .75	15.00	(cyanocobalamin), vials, 50- gram, lots	1 B.OO	9 75
ributyl citrate, 1.1., drums, f.o.b.,			Vitamin B., 1% trituration of cryst. B.	,	
works		1.77	(cyanocobalamin USP) with dical com phosphate, 25-kilo dms. kilo	. 10.75	12 75
bulylamne, dme., c.l., dvdb			Vitamin B ₁₂ , 0.1% trituration of cryst		
tanks, same basisib	. 1.33	~	B _{iz} icyanocobalamin USP) with mannitol, 25-kilo dmskilo		o -
richloroacetic acid. tech., 300-lb dms.,c.l.,f.o.b.,workslb	94	_	Vitamin B ₁₂ , cobalamin concentrate Ni	F	_
USP, 100-tb. dms., int. equald lb	99%		with mannitol. 1,000 mcg, pe gram, dms, per gram activity	r y 19.49	5 -
a.4-Trichlorobenzene, pure, tankab. b			Vitamin 8,, 1% Vitamin 8,, USP, ab	j.	-
.1,1-Trichlorgethane, tanks, con	 -		sorbed on resin, 5-kilo dms., 500 gram lots, frt.alid. per gram activ	} <u>.</u>	5 -
sumers, divd	40%	•	Vitamin B ₁₂ , 1% cobalamin concentrate	Β,	_
workslt	ı42	-	NF, absorbed on resin, 5-kil	lo	Λ -
Trichtoroethylene, tanks, divd It Frichtorousocyanuric acid, dms It		-	dris, fit, alld per gram activity. Vitamin B ₁₂ , 1% cyanocobalarnin i		-
	,	_	المالية المالية المالية المالية		

~	Bu(cyanocobalamin USP) with			l ∠"
-	mannitol, 25-kilo dmskilo.	15.80	-	Zır
_	Vitamin B ₁₂ , cobalamin concentrate NF			Z
	with mannitol, 1,000 mcg, per			١
_	gram, dms, per gram activity	19.45	-	Zi
	Vitamin B ₁₂ , 1% Vitamin B ₁₂ , USP, ab-			l l
	sorbed on reain, 5-kilo dms., 500-			١
	gram lots, frt.alid. per gram activity	15.65	-	
	Vitamin B ₂ , 1% cobalamin concentrate,			Zi
•	NF, absorbed on resin, 5-kilo	45.40		١٠.
-	dms., frt. alld per gram activity.	15.40	-	71
-	Vitamin B ₁₂ , 1% cyanocobalarnin in			Z
	gelatin, 2.5-kilo dms., frt.	15.40	_	\ ~
	Vitamin C (see Ascorbic acid).	19.40	-	Z
-	Vitamin D (see Cholecalciferol)			Z
	Vitamin D2 (see Codiliver and Fishliver oils)	١.		l
1.76	Vitamin E (see a-Tocopherol and Whoat o	orm oll).		2
	Vitamin H (see Biotin).	•		1 _
-40	Violet methyl toner (see Methyl violet tone	ir)		Z
.48		ــــــــــــــــــــــــــــــــــــــ		lz
.48				"
.27%	1 1 2 2 2			Ιz
.6111				l'
_	i ww			lz
_				1 -
_	1 1 1			1
_	History and the last of the la	_		2
~	Warfarin 0.5%, drns., ton lots, frt. alid.			1
	New York or Chicago lb.	.75	_	1 7
-	Wheat germ oil, cold-pressed, gal.	16.50	17.50	Ι.
	cold-processed get	14.00	-	- 1 3
-				
1.45	A Aurile biacibitate "OSI, bowg" 100-ip.			- 1 1
	White precipitate, USP powd., 100-lb. dms., f.o.b. works	7.892	11.24	1
.55	Whiting (see Calcium carbonate).		11.24	1
.55 	Oms., f.o.b. worksb. Whiting (see Calcium carbonate), Wintergreen oil, syn. (see Methyl saikyla	ue).	11.24	
.55 	Omst.o.b. works lb. Whiting (see Calcium carbonate). Wintergreen oil, syn. (see Methyl sailcyla Witch nazel bark, bis	ue). 1.35	11.24	
.55 - -	Whiting (see Celclum carbonate). Whiting (see Methyl salicyla Witch hazel bark, bis	ile). 1.35 1.75	11. 24 - -	
.55 	Oms., r.o.b. works. b. Whiting (see Calcium carbonste). Wintergreen oil, syn. (see Mathyl sallcyls Witch hazel bark, bis. ib. teaves, bis. ib. 400 mesh, bgs., c.j. works. ion	1.35 1.75 134.00	11.24 - - -	
.55 - - -	Whiting (see Calcium carbonate). Whiting (see Calcium carbonate). Wintergreen oil, syn. (see Methyl salicyla Witch hazel bark, bis	1.35 1.75 134.00 117.00	11.24	
.55 - - -	Oms., r.o.b. works. b. Whiting (see Calcium carbonste). Wintergreen oil, syn. (see Mathyl sallcyls Witch hazel bark, bis. ib. teaves, bis. ib. 400 mesh, bgs., c.j. works. ion	1.35 1.75 134.00	11.24 - - - -	

(anthangum, food 300-lb. dms., 1.o.b.

ind., grade, same basis 10.

Providence, R.I., divd. . South Bend. Ind., divd. . m-Xyleno, high purity, tanks Toxas City, Tex o-Xylene, tanks, works p-Xylene, tanks, divd. lenodiamine, dms., t.l., f.o.b. works..... 1.70 2.4-Xylidino, toch , liq., c.l., t.l. f.ob. 1.50 Yara yara, 25-lb. cns... reast, pure brewer s debittered, NF, Sec-charomyces, 11, 1.0 b works . b. extra, bots. (b. 26.50 Ylang-ylang oil, extra grade (b. 36.50 grade 1 (b. 25.00 Zein, bqs., 2,000-lb. lols dms 20,000 bs 11, 1,00 wks lb
Zinc chloride, USP, gran , dms... klo
Zinc chloride, tech soln. 50%
tanks, 1 o b Cleveland,
Ohio ... 100 lbs.
Concord, N.C 100 lbs.
Escaped Text 100 lbs. Concord, N.C Freeport, Tex. Old Bridge, N.J 100 lbs. /O degree, same basis Cleveland. . 100 lbs. 100 lbs. Old Bridge, NJ 72 degree, same basis Cleveland, Ohio 100 ibs Concord, NC 100 ibs Concord, NC . . . Oki Bridge, NJ . . . 100 lbs. works, in oquald b.
Zinc inotal, high grade, divd b.
Zinc naplithonate, liq. 8% Zn, diris,
divd b. Zinc nihato, tech., flako 300-lb. dms. - lb. Zinc oxido photo conductive, bgs., c.l. works.
Zinc stearate USP, bulk, 1.1. Zinc sulfate. gran., monohydrate, ki-dust. grade 36% Zn., bgs., o.l., Zinc yellow (see Zinc chromate). Zinc-ammonium chloride, bgs., c.l., Zinc undecylenate, dms., works. . ib. 200-lb. dms., frt. elid. . ib. 2500-lb. dms., frt. elid. . ib. 2500-lb. dms., frt. elid. . ib. 2500-lb. dms. 200-lb. dms. 200-lb. . ib. 22500-lb. . ib. 2290-lb. 2000-lbs. min., works. . ib. 2290-lbs. min. works. . ib. 2100-lbs. min. . ib. 2100-lb . ton 200.00 . ton 140.00 . ton 160.00 . ton 500.00 141.00

electronic, same basis insulating, atabilized, 326°F same basis.

unstablized, 325°F same

US imports of chemicals and related materials are reported in this section by CPI material. Listings include consignee where possible, container, net weight. name of vessel (in parenthesis), port of origin and date of shipment's arrival in New York or the Port of Newark.

US chemical imports/exports are tabulated monthly in the market reports.

ANINO 2 METITETIES OF THIS SOLID (1217 103)
(Rouen) Rotterdam, 9/18
ACETAMINOPHEN Sterling Organics 243 dms (42588 bs)(Atlantic Concert) Liverpool, 10/6.
ACETAMINOPHEN POWDER Roussel Pharmaceutical Produ 165 dms (39140 lbs) (Strathconon) Rotter

- CBEE

etroleum, Ind. or nitration, tanks

Aliance, La , I.o.b. . . Atlanta, Ga., divd. . . Bayonne, N.J., divd. .

Baytown, Tex., f.o.b Chicago, III., divd Clariton, Pa

Houston, Tex., divid.

New Jersey Metro, divd Xylene, potroleum, Ind. or nitration Philadelphia, Pa., divd.

dam. 9/25. ACETATE LINALYLE SYNTHETIC 160 dms (68078 lbs) (Atlantic Saga) LeHavre, 9/30.
ACETONITRILE Cruschem 1 ctn (441 ibs) (Atlantic Con-

cart) Liverpool, 10/8. ACETYL CHLORIDE Pan American Container 141 dms (69125 lbs) (Atlantic Concert) Liverpool, 10/8. ACRYLONITRILE BUTADIENE RUBBER Alba Fwdg 598 Ne (39357 lbs) (Oriental Minister) Yokohama, 9/30. ADIPIC ACID 1920 bgs (105821 lbs) (Bezias 4) Consianza, 9/29. ADAR AGAR Allitransport 40 dms (4859 lbs) (American

Lyxx) Antwerp, 10/3. Hardd Pepper 40 dms (4850 lbs) (Ever Glory) Osaka, ALPHA METHYL DOPA Novopharm 60 dms (3836 lbs)

(American Lyrix) Bremerhaven, 10/3.

ALUMINUM OXIDE Ren Plastics 240 bgs (8188 lbs) (Rosarlo) Bremerhaven, 10/4. ALUMINUM PASTE Gardner Asphalt 180 dms (45635 lbs) (Atlantic Conveyor) Gothenburg, 9/29. levell Chemicals 360 dms (42690 lbs) (Rosario) Felix:

IOWE, 10/4.
AMMONIUM BICARBONATE Rhone Poulenc 1440 bgs (74075 lbs) (Roserio) Antwerp, 10/4. AMMONIUM BIFLUORIDE 880 bgs (45591 lbs) (Evar Livingi Hamburg. 10/5. MMONIUM PARATUNGSTATE Sassoon Metals &

Chemicals 340 dms (41227 lbs) (Bing He) Shanghal. MIPICILUN TRIHYDRATE Beecham 74 kgs (6003 lbs) (Allantic Conveyor) Liverpool, 9/29.
ANTIMONY REGULUS Minmetals 56 pli (117287 lbs) (BrigHe) Shanghal, 10/5. ANTIMONY TRIOXIDE McGean Rohco 1200 bgs (66868

ibi) (Bing He) Shanghai, 10/5.
ANTIPYRINE NF FINE 40 dms (4780 ibs) (Kazımlerz Pu laskij Bremerhaven, 10/7. ARABIC GUM D. Steengrafe, 1, con (18012, lbs.) (Tanal

Abdan, 9/23. Near 243 bgs (33179 libs) (Tana) Abidjan, 9/23. ASCORBIC ACID VITAMIN C Daniel F Young 800 dms (50089 lbs) (Bing He) Shanghal, 10/5.
ASSARTIC ACID Viking Sea Freight 40 bx s (71429 lbs)

(Ever Living) LeHavre, 10/5. ATACTIC COPOLYMER BRASS FAX 114 plt (243452 lbs) (American Hawan) Rio Grd Do S. 10/5.

BARIUM CARBONATE Cometals 1380 bgs (75856 lbs)
(Onental Minister) Hong Kong. 9/30.

Gu/ Tomas 2720 bgs (151714 lbs) (Bling Ho) Kobe,

BARIUM COMPOUND Nystone Chemicals 29 skd (71500 bs)(Allantic Conveyor) Hall(ax, 9/29.
ARIAM SULPHATE Ore & Chemical 20 bgs (1151 lbs)

(Rosaro) Antwerp, 10/4.
BASE MATERIAL FOR PERFUMES SCRC Transport 17 paising to performed scale transport in paising the (Strathconon) Loft-baver. 9/25.

BENZOGUANIMNE James E Fox 881 Ugs (44438 (bs) (Ever Living) Hamburg. 10/5.

BENZY, ALCOHOL PERFUME GDF Chimie 78 dms (4977 by) CONTROL

(3907 bs) (California Star) Antwerp, 9/26, BENZYL CYANIDE Inter Maritime F wdg I trik (44870 ibs) (Ever Living) Antwerp, 10/5. BEROLAMINE 260 Berol Chemical 25 dats (33209 ibs) (Roseno) Bremerhavon, 10/4. BETA HYDROXYNAPHTHOIC ACID 20 pil. (27028 lbs:

(Etrathconon) Rollardam, 9/26. BETA NAPHTHOL Leyden Customs Expeditors 518 bgs

28783 lbs/ Bling Hej Kobe, 10/5.

8LACK PEPPER Fritzsche Dodge & Olcuit 166 ctn (7370 lbs)(Actuaria) Algedras, 9/30.

Mae 56 ctn (2487 lbs) (Actuaria) Algedras, 9/30.

Fatzsche Dodge & Olcott 55 ctn (2443 lbs) (Actuaria)

Algedras, 9/30.

8LANC FIXE Ore & Chemical 3200 bgs 182435 lbs)

(Strathconon) Antwarp, 9/26.

(Strathconon) Antwerp, 9/25.
Ors & Chemical 1400 bgs (79401 lbs) (Stelan Starzynsti) Rotterdam, 9/29.
Stolan Starzynsti) Rotterdam, 9/29.
Stolan Starzynstion (Stelan Starzynsti) Rotterdam, 9/29.
Stolan Acid Gran (Starzynstin) Antwerp, 10/4.
(35086 lbs) (Cape York) Salerno, 10/6.
Rhose Pouleno 360 bgs (40000 lbs) (Rosario) LeHavre,

10/4. \$ROMOCHLOROPROPANE Rhone Poulenc 60 dmr (35715 ba) (Rouen) Antwerp, 9/18. BUTNEDIOL TECH FLAKES GAF 293 dms (42035 lba)

(Sielan Siarzynski) Rotterdam, 9/29. CADMIUM OXIDE 420 dms (48167 lbs) (California Star)

CADMIUM PIGMENT Davies Turner 48 dms (5419 lbs)

(Allantic Conserved Abstract 9/20

Allantic Conveyor) Liverpool, 9/29.

(Muller Clark & Daniels 6 dms (370 lbs) (Atlantic Conveyor) Liverpool 9/29

Conveyor) Uverpool, 9/29.

19 dne (1173 lbs) (Atlantic Concert) Liverpool, 10/8.

CALCIUM CARBONATE Whittaker Clark & Danlels 385

CALCIUM HTRATE ACS Chemical 5 dms (2502 lbs) (Ever

Gory Tokyo, 10/4.

Gory Tokyo, 10/4.

APROLACTONE MONOMER Nisski Intl Transport 80

days (39930 lbs) (Bing He) Kobe, 10/5.

(Lese Marsk) Singapore, 10/4.

Briannesd, Singapore, 10/4.

Briannesd, 10/4.

SAMINO 2 METHYLPHENOL TTRG 9 dms (1217 lbs) | CAUSTIC SODA POTASH Cada 1 bks (1086718 lbs (Toshiwa Maru) Birkenhead, 10/4. CH/LI OiL House of Lawrence 100 ctn (3483 lbs) (Ever

Glory) Hong Kong, 10/4.
CHLORODIFLUOROME THANE John Steer 5 trik (184503 lbs) (Rouen) Rotterdam, 9/18.
CHLOROMETHYLPYRAZOLONE 14 csk (4687 lbs)

(Bing He) Shanghai, 10/5.
HROMIC OXIDE American Chrome & Chemicals 800 bgs (4503 lbs) (Allantic Concert) Liverpool, 10/6. CITRIC ACID Helm New York Chemical 396 bgs (39965 ibs) (Abuegila) Genoa, 10/8. CITRONELLA OIL 80 dms (35702 lbs) (Bing He) Kobe.

10/5. D IMONENE 120 dms (49207 lbs) (American Lancer) San-

Polarome Mig 125 drns (51257 lbs) (American Lancer) Santos, 10/9. Ungerer 80 dms (32805 lbs) (American Lancer) Santos, DEXTRINE 800 bgs (44533 lbs) (Ever Living) Rotterdam, 10/5. DIACETON ACRYLAMIDE Kyowa Hakko 50 dms (5071

ibs) (Leise Maersk) Kobe, 10/4.
DIAZO RESIN Autotype 1 cin (9 lbs) (Allantic Concert) Liverpool, 10/8.
DIETHYLETHYLANILINE 9 dms (2863 lbs) (Atlantic Saga)

Rotterdam, 9/30.
DIHYDRO DIBENZO TETRAAZA 20 dms (2522 lps) (Atlantic Saga) Rotterdam, 9/30.
DIPENTAERYTHRITOL. Surnitrana 640 hgs (28793 lbs)
(Ever Glory) Tokyo, 10/4.
DIPHENYL METHANEDI ISOCYANATE Alltranaport 58

pky (32758 lbs) (Kazımlerz Pulaskı) Bremerhaven, 10/7. DIPHENYLMETHANE 4 4 OIISOCYANATE Jones & Vin-ing 30 dms (17527 lbs) (American Lynx) Felixstows, 10/3. EPOXY MOLDING POWDER Hysol 71 pkg (22853 lbs)

(Oriental Minister) Yokohama, 9/30 ETHYL ACETATE 1 bks (1155221 lbs) (Golar Petrosea) Rotterdain, 10/2. ETHYLENEDIAMINE 2 Irik (78836 lbs) (Rosario) Rotter-

FENNEL SEEDS William E Martin & Sons 440 bgs (48501 ibs) (Rosario) Felixatowe, 10/4. FERROUS FUMARATE 345 dms (40311 lbs) (Rosario)

Bremerliaven, 10/4. FLUOROCARBON POLYMER Nichtinen 214 dms (25240 Ibs) (Leise Maersk) Kobe, 10/4. FOAMALDEHYDE RESIN Donex 36 pkg (48255 lbs) (Sea Land Pacer) Algedras, 10/7. GELATIN Corbett Intl 894 dms (187832 lbs) (Ever Spring)

Fos, 10/6. GINGER Qualitrade 938 ctn (29571 lbs) (American Hawaii) Sentos, 10/5.

GRAPEFRUIT OIL Ungerer 140 dms (57408 lbs) (American Lancer) Santos, 10/9.

GUAR GUM Premcem Gums 800 bgs (40565 bs) (Oriental Ministor) Singapore, 9/30.

GUM OLIBANIUM Mear 500 cs (27557 bs) (Rosario) Fe-

hxstows, 10/4.

GUM TURPENTINE PDM 160 dms (65609 lbs) (Elms HEXANE Sholl Oil 1 bks (651150 lbs) (Golar Petroses Rotterdam, 10/2. HEXENYL SALICYLATE Alliransport 1 dms (408 lbs) (At-

Ianito Saga) LeHavre, 9/30.
HIDE GLUE Teub & Carmel 400 bgs (40124 lbs) (Arnerican Linicar) Buenos Aires, 10/9.
Transaklaniko By Products 760 bgs (79543 lbs) (American Lancor) Rio Grd Do S. 10/9.
HIGH DENSITY POLYETHYLENE 320 bgs (18272 lbs)

(Atlantic Conveyor) Gothenburg, 9/28. HYDROFLUORIC ACID ANHYDROUS Mobay Chemical (Ink (102955 lbs) (Rosario) Bremerhaven, 10/4, HYDROGEN PEROXIDE BOH 17 pkg (260 lbs) (America

HYDROGEN PEROXIDE BDH 17 pkg (260 lbs) (American Lynx) Bremerhaven, 10/3.

IBUPROFEN Interner Steamship 80 dms (9865 lbs) (Enterprise) Leghorn, 9/30.

INDIGO PURE POWDER Pasasic Cofor & Chemical 840 dms (58335 lbs) (Bing He) Kobs, 10/5.

INOSITOL NF 1 OXYTETRACYCLINE HC M Gurvay & Barry 120 dms (7813 lbs) (Bing He) Shanghla, 10/5.

INSULIN CHILLED E R Squibo & Sons 21 pt (27921 lbs) (Atlantic Concert) Gothenburg, 10/6.

IRON OXIDE 1 con (41887 lbs) (Strathconon) Rotterdam, 9/55.

9/25. ISODECANOL 1 bks (439560 lbs) (Golar Patrosea) Tee-

eport, 10/2. ISOPHTHALIC ACID Ashland Chemical 20 bgs (40741 ioa) (Ever spring) Legnorn, 10/5.

ISOPROPYL ALCOHOL Royal Lubricants 1 bks (2209558 lbs) (Golar Patrosea) Rotterdam, 10/2.

ISOPROPYL TITANATE Kay Fries 1 tnk (39396 lbs) (California Star) Antwerp, 8/26.

KARAYA GUM Ampak 350 bgs (38966 lbs) (Rosario) Fe-

1xstowe, 10/4. KARAYA GUM SIFTINGS Celanese Water Solube Polyi

KARAYA GUM SIFTINGS Celanese Water Solube Polym 219 bgs (40556 lbs) (Rosarlo) Feliketowe, 10/4. Diamond Shamrock 419 bgs (78916 lbs) (Rosarlo) Felikstowe, 10/4. L ARGININE HCL L HISTIDINE HCL Kyowa Hakko 4 pkg (236 lbs) (Lelae Maersk) Kobe, 10/4. L CARVONE American Shog 30 dms (13228 lbs) (American Lancer) Santos, 10/9. L CYSTEINE HCL MONOHYDRATE Mercor Development 20 dms (1236 lbs) (Lelae Maersk) Tokyd, 10/4. 20 dms (1235 lbs) (Laise Mearsk) Tokyd, 10/4. LICORICE ROOT WHOLE Herbertum 50 bgs (4519 lbs).

(Oriental Minister) Singapore, 9/30.

(American Hawati) Santos, 10/5. 120 bgs (6122 ibs) (American Lancer) Santos, 10/9. /ETHYL CELLULOSE Jecasa 48 pkg (3280 ibs) (ORiental Minister) Yokohama, 9/30.
METHYL ETHYL KETONE Royal Lubricants 1 bks (2198198 lbs) (Golar Petroses) Rotterdem, 10/2. METHYLCELLULOSE Henkel 440 bgs (22408 lbs) (Rosarlo) Rotterdam, 10/4. CHROMIC ACID Browning Chemical 320 dms (38098 ibr (Rouer) Antwerp, 9/18.

METHYLPENTENE POLYMERS Mitsul 80 pit (70107 lbs)

(Bing He) Kobe. 10/6.
60 ph 70107 lbs) (Bing Ha) Kobe. 10/5.
MICROCRYSTALLINE WAX Internor Trdg 500 plg (1151904 lbs) (Cordoba) Selvador. 9/18.
MICROWAX Ind Rev Materials 72 ctn (128372 lbs) (Attacks of the cordoba) Selvador.

laniic Saga) Bremerhaven, 9/30. MINERAL WAX Strohmeyer & Arpe 441 bgs (44870 ibs) (Ever Living) Hamburg, 10/5 MIXEO PENTANES Chase Manhatten Bank 49248 br

Living) Antwerp. 10/5 LITSEA CUBEBA OIL Euerst Day Lawson 24 dms (10498

M AMINOBENZOTRIFLUORIDE D Nedlibyd Lines 21 csk (12593 lbs) (Rouen) Rotterdam, 9/18. M XYLIDINE VIC 15 csk (7335 lbs) (Rouen) Rotterdam.

MAGNESIUM STEARATE VGF Chemical 600 bgs (33907

lbs) (Kazimierz Pulaski) Rotterdam, 10/7. MALEIC ANYDRIDE Huels 720 bgs (40961 ibs) (Rosario

Bremerhaven, 10/4. White Cross Laboratories 700 bgs (39044 lbs) (Bing He)

Kobe, 10/5. IAHJORAM Agricola 525 bgs 923148 ibs) (Export Pa

triol) Alexandria, 10/4.
METHYL 12 HYDROXY STEARATE 2 mk (77217 iba)

lbs) (Bing He) Shanghai, 10/5.

(48600914) (Maasstroom) Coatzacoalco, 9/19. MONOCHLORACETIC ACID 201 drus (44,312 lbs) (Atlantic Conveyor) Gothenburg, 9/29

MONOSODIUM GLUTAMATE Alinomoto 720 dnis (77,999 lbs) (Punta Brava) Santos, 10/02.
720 dms (77,999 lbs) (Elma Cinco) Santos, 10/08

MLM Express 825 dms (154,322 lbs) (Oriontal Minister)

Busan, 9/30. MUSK XYLOL Order 180 dms (24,405 lbs) (Bing F Shanghai, 10/05.
MUSTARD Schenkers Intil Fwdrs 805 pkg (32,297 lbs)

(Siefan Starzynski) Le Havre, 9/29 MUSTARD POWDER House of Lawrence 100 ctn (3,263 lbs) (Ever Glory) Hong Kong, 10/04

MUSTARD VINEGAR Haddon House Food Products
3.394 ctn (47.331 lbs) (California Star) Le Havre,
9/26
n-BUTYL METHACRYLATE MONOMER Hemsoth Kerney 2 tok (78,374 lbs) (Rouen) Rotterdam, 9/18

2 mk (79,145 lbs) (Strathconon) Rotterdam, 9/25 1 mk (39,617 lbs) (California Star) Felirstove, 9/26 NICKEL SULFATE REFINED Afrimet Ind. 1,680 bgs (86.685 lbs) (Ever Living) Attiworp, 10/05 NIBROSINE, SOLUBLE Stuffs 100 dins (7,469 lbs) tVishva Shakti) Calculta, 10/07

NUTMEG Act Europe 260 bis (28,660 ibs) (California Star) Antwerp. 9/26. NUVA FH MONOMER 19 hob (2,654 lbs) (Rouen) Rotter

dam, 9/18. -DIANISIDINE Dunlap Alpers & Mott 190 dms (31,446 (be) (Onental Minister) Kobe, 9/30

OIL BLACK PEPPER 13 ctn (1,213 lbs) (Actuaria) Algecires, 9/30. OLIVE OIL Santa Anite Importe 3,690 crt (186,088 los

(Ever Spring) Legham, 10/06.

ORANGE OIL Firtzsche Dodge & Oicott 250 dms (102,515 ibs) (American Lancer) Santos, 10/09.

Ungerer 80 dms (32,805 ibs) (American Lancer) Santos, 10/09. OREGANO CGM French Line 1000 btgs (22,046 lbs) (At-

lantic Sega) Le Havre, 9/30.

Durkee Foods 1102 bgs (22,046 lbs) (Export Patriot)
Piraeus, 10/04.

EL Scott 1100 bgs (22,046 lbs) (Export Patriot) Piraeus.

KHL Fiavors 1200 bgs (23,999 lbs) (Export Patriot) Istanbul, 10/04.

Maurica J Golomback 1102 bgs (22,059 lbs) (Export Patriot) izmir, 10/04.

Mubia Valenzuela 1 cs (220 lbs) (Silver Dream) La Gueira, 9/24.

William E. Martin 650 bgs (13,001 lbs) (Export Patriot)

William E. Martin 650 bgs (13,001 bs) (Export Patriot) istanbul, 10/04.

ORTHO CHLOROBENZALDEHYDE Fallek Chemical 6 dms (4,467 lbs) (Leise Maerak) Tokyo 10/04.

ORTHO XYLENE BASF Chemicals 1 bks (4,460,126 bbs) (Golar Petrosea) Rottardam, 10/02.

OXALIC ACID Browning Chemical 4632 bgs (234,872 lbs) (Bing He) Shanghal, 10/05.

1360 bgs (75,707 lbs) (Bing He) Shanghal, 10/05.

Quadra Chemicals 640 bgs (35,556 lbs) (Bing He) Shanghal, 10/05.

OXYNITROPHENYLARSENIQUE ACID Rhone Pouleno 200 dms (24,251 lbs) (Rosarlo) Le Hayre, 10/04.

200 dms (24,251 lbs) (Rosario) Le Havre, 10/04. p-CHLORO-o-NITRANILINE 32 csk (13,408 lbs) (Rosario Rotterdam, 10/04. p-DIETHYLAMINOBENZALDEHYDE 52 dms (13.091 lbs)

(Atlantic Saga) Rotterdam, 9/30. p-METHYL BENZOYL CHLORIDE Kay Fries 76 bri (37,615 lbs) (Stefan Starzynski) Bremerhaven, 9/2i p-NITROANILINE TRTRG 152 csk (38,467 lbs) (Strati p-NITROBENZOIC Nobel Chemicale 24 pit (41,482 lbs) (American Lynx) Bremerhaven, 10/03. p-TOLUENESULFONYL CHLORIDE Duniap Alpera & ...

hama, 9/30. p-W OXALIC ACID Quadra Chemicals 1280 bgs (71,113 ibs) (Bing He) Kobe, 10/05.

PALM KERNEL Oll. Order of Shipper 2 bks (2,221,613 bis) (Blot Replay Park Gudang, 10/02.

PALM Oll. Angels Ankoma 6 bri (1,058 lbs) (Tana) Monrovis, 9/23.

rovis, 9/23.

Eva H Withbrapoon 3 bri (105 lba) (Export Champlon)

Monrovia, 10/01.

George Boaman 80 bri (3.968 lbs) (Tana) Monrovia,
9/23.

9/23. J Tyroma Karkulan 20 bri (6,173 lbs) (Tans) Monrovia, 9/23. PALMITIC ACID Artex 900 bgs (49,842 lbs) (Ever Glory) Singapore, 10/04. PARACETAMOL POWDER Singohem 280 dms (17,902 | bs) (Bing He) Shanghai, 10/05.

LINALOL SYNTHETIC 80 dms (34039 lbs) (Atlantic Saga) PENICILLIN Novo Laboratoires 201 dms (13,073 fbs) (At-LeHavre, 9/30. LIQUID SILICONE RUBBER Kiddle Products 6 ctn (319 lbs) (Rosario) Rotterdam, 10/4. LITHOPONE Ore & Chemical 700 bgs (39700 lbs) (Eve

PENTANE Northville Ind 9,177,000 gal (48,650,560 lbs) (New Vanguerd) Pajaritos, 10/03. PHENOXY ACETI C ACID Bristol Myers 792 bgs (45,939 lbs) (Kazimierz Pulaski) Rotterdem, 10/07. PHENOXYACTIC ACID Bristol Myers 792 bgs (45,939 bs)

(Stefan Starzynski) Bremerhaven, 9/29, HENYL ACETIC ACID Pan American Container 100 dms (11.684 lobs) (Atlantic Concert) Liverpool, 10/06. POLYACETAL 105 bgs (6.537 lbs) (Rosario) Rotterdam,

10/04. POLYCARBONATE RESIN GRADE AD 550 Marubeni America 31 bgs (44,459 lbs) (Bing He) Kobe, 10/05.
POLYESTHER CRODAMIDE Polyesther 220 kgs (24,251 bs) (Atlantic Concert) Liverpool, 10/06.
POLYPROPYLENE RESIN NF 905A Sumitrans 120 pit

(126.722 lbs)(Bing He) Kobe, 10/05.
POLYVINYL ALCOHOL Marubeni America 80 pkg (85.010 lbs) (Oriental Minister) Kobe, 9/30.
POLYVINYL CHLORIDE EXPAND HAMLE Pierce & Stavens Chemical 418 bgs (3,686 lbs) (Alfantic Conv

eyor) Gothenburg, 9/29. POLYVINYLIDENE CHLORIDE Pierce & Stevens Chemi-cal 160 dms (28,457 lbs) (Atlantic Concert) Gothenburg. 10/08.

POTASSIUM CARBONATE BDP Inti 720 bgs (41,058 lbs) (Stefan Starzynski) Rotterdam, 9/29. Kay Fries 400 bgs (41,058 lbs) (Ever Living) Antwerp,

10/US. POTASSIUM CYANIDE Mitsui 400 ltm (44,800 lbs) (Ever Glory) Osaka, 10/04 POTASSIUM PERCHLORATE Nu Tech Chemical Ind 150

dms (41,667 lbs) (Atlantic Concert) Gothenburg, 10/ 06. PSYLUMN SEED HUSK Commodity Service Intl 320 dms (35,121 lbS) (Roserio) Felixstowe, 10/04. PVC GRANULES Daniel F Young 2 cs (3,776 lbs) (Atlantic Concert) Liverpool, 10/06

SEBAME OIL PURE FOOD GRADE AJ Murray 78 dins (35,596 lbs) (Bing He) Shanghai, 10/05.
SILICONE Sommer & Maca 10 plt (12,346 lbs) (Atlantic Saga) Rotterdam, 9/30.
SILICONE RUBBER J Sil 2 plt (3,086 lbs) (Atlantic Con-

veyor) Liverpool, 9/29. SODIUM ALGINATE Netties 800 sks (41,760 lbs) (American Lyrix) Bromerhaven, 10/03, SODIUM BICHROMATE 300 ogs (33,466 lbs) (Bazins 4)

Constanza, 9/29.

SODIUM CARBOXYMETHYL CELLULOSE A American Import Service 42 Ligs (2,438 lbs) (American Lynx) Rotterdam, 10/03.

SODIUM CYANIDE 352 dms (86,090 lbs) (Rossno) Rollei dam, 10/04. Montedison 252 dms (36,389 lbs) (Export Patriot) Leghorn, 10/04
SODIUM DICHROMATE CRYSTALS Calabrian Intil 760

bgs (77, 337 lbs) (Californis Star) Antwerp, 9/25. SODIUM HYDROXIDE Mailinekrodi 336 dnis (39, 185 lbs) (Allantic Conveyor) Gothenburg, 9/29
336 dms (39.185 lbs) (Atlantic Concert) Gothenburg,

10 06 SODIUM METABISULPHITE ICC Ind 350 0gs (39,352 ibs) (Stefan Starzynski) Bremerhaven, 9/29 SODIUM PHOSPHATE Militans 374 cin (3, 156 lbs) (Onen-

tal Minister) Kobe, 9/30. SODIUM PHOSPHATE DIBAS Mitrans 4 bgs (225 lbs) SODIUM PHOSPHATE DIBAS Mittans 4 bgs (225 lbs)
(Oriental Minister) Kobo, 9/30
SODIUM TRIPOLYHOSPHATE GRANULAR Sat Customs Brokers 432 bgs (44,271 lbs) (Ever Spring)
Leghorn, 10/08.
SODIUM TRIPOLYPHOSPHATE Advent Chemical 1311

bgs (91,396 lbs) (Strathconon) Antwerp, 9/25. Naw China Trdg 580 bgs (32,35 I lbs) (Bling Ha) Shang-

SORANE RESIN Jones & Vining 50 dms (24.802 lbs) (Amelcan Lynx) Felixstowa, 10/03. STEARYL ALCOHOL Hankel 2000 bgs (89,508 lbs) (Roserio) Antwerp, 10/04. SULFADIMIDINE Universal Transcontinental 360 pkg

(23,810 lbs) (Oriental Minister) Hong Kong, 9/30. SULFADIMIDINE BP80 Flevine Intl 160 kgs (20,812 lbs) (Birig He) Shanghai, 10/05. SULFAGUANIDINE & SULFATHIAZOLE Universal Transcontinental 360 cms (43,784 lbs) (Sea Land

Pacer) Afgeciras, 10/07. SULFAMETHOXAZOLE Shlonogi 84 dms (10,185 lbs) (Leise Maersk) Kobe, 10/04. SULFUR PRECIPITATED USP Davos Chemical 20 dms

(2,381 lbs) (Stefan Starzynski) Bremerhavan, 9/29. TARTARIC ACID VICHY Tartaric Chemicals 800 bgs (44,974 lbs) (Export Patriot) Genoe, 10/04.

THIAMINE HYDROCHLORIDE Daniel F Young 60 dms (3,968 lbs) (Bing He) Shanghat, 10/05.

K&M Custom Brokers 60 dms (3,968 lbS) (Bing He) Shanghat, 10/05.

THIONYL CHLORIDE Uniroyal 1 thk (39,551 lbs) (Californical State Angles) (Californical State Angles)

nie Ster) Antwerp, 9/26. THIOUREA James E Fox 864 bgs (43,486 lbs) (Ever Living) Hamburg, 10/05. TTTANIUM DIOXIDE Blue Bell Chemical 800 bgs (41,502

iba) (American Lynx) Rotterdam, 10/03. Goodyear inti 1440 bgs (82,144 lbs) (Sea Land Pacer) Algectras, 10/07. NL ind 4000 bgs (208.791 lbs) (Strathconon) Antwerp.

8400 bgs (331,133 lbs) (Roserio) Rotterdam, 10/04, Rhone Poulenc 400 bgs (209,217 lbs) (Strathconon) Antwerp, 9/25. Superior Materials 1600 bgs (83,004 lbs) (American Lynx) Rotterdam, 10/03.

800bgs (40,124 lbs) (Sea Land Paper) Algecires, 10/07. WTC Ocean Freight 4800 bgs (207,453 lbs) (Ever Liv-Ing) Antwerp, 10/05. NL Ind 800 bgs (82.981 bs) (Stefan Starzynski) Rotter-800 bgs (82,981 ibs) (Kazimlerz Pulaski) Rotterdam, 10/07

Kemira 320 bgs (39,145 tbs) (Kazimierz Pulaski) Bre-

merhaven, 10/07.

Huxley Raw Material 760 bgs (38,890 bbs) (Kezimterz Pulaski) Bremerhaven, 10.07.

Huxley Raw Material 760 bgs (38,690 bbs) (Stefan Starzynski) Bremerhaven, 9/29.

Rhone Poulenc 3200 bgs (187,373 bbs) (Strathconon) balleting 9/29.

Le Havre, 9/25;
NL Ind 8800 bgs (452,384 lbs) (Rouen) Antwerp, 8/18.
TOLULENE DISOCYANATE Stag 3 cab (132 lbs) (Atlanta Saga) Rollerdam, 9/30.
TRIETHYLAMINE 2 trk (83,228 lbs) (Rouen) Rollerdam, 9/18. TRIMETHYLPHENOL 1 trik (38.061 lbs) (Strajhçonor Bremerhaven, 9/25.

CHEMICAL MARKETING REPORTER

November 3, 1986

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A mark	ht M6443 8- 61 cm/2:	Delim a . coc	
GAL.	PSI	GAL.	PS!
14.000	30	5.800	30
13,000	GO	5,600	69
11,000	30	3,400	30
7.000	30	3,200	103
6.400	50	900	352
	THERS FROM 5	0 TO 1,000 GAL.	

TANKS-31688 36,000, 18,500, 13,500 (2), 12,000, & 6,600 GAL. MANY FROM 100 TO 5,000 GAL.

HEAT EXCHAMBERS-3 1698 3,560, 2,480, 853, 617, 614, 471, 350, 402 S0, FT. HEAT ERCHAUGERS-TITATION 1,470, 1,140 SQ, FT, 440/30 PSI RMACTORE-31699

5, 100 GAL, 350 PSI AGIT., 3, 170 GAL, 359 PSI AGIT. (4) MISCLILANEOUS

CENTRIFUGAL PUMPS - 5 TO 100 NP 316SS (40) MEATER ISMM BYUZHR THERMAL PRODUCTS GAS FIRED SKID MN (D. (2)

COMPRESSORS-1,240 CFM @ 110 PSI 250 HP (2) 220 CFM @ 215 PSI 150 HP (2) AIR FIN COOLERS TO 80,440 SQ. FT. (8) ALUMINUM BINS & SILOS TO 3,500 CU.FT. COLUMNS-316SS-132"X110'X43 TRAY, 90"X35'X10 16"X33" PACKED 30 PSI (2)

I/HAND, XLE AIR COMPRESSORS: 20% x12% x 8%, 100 PSI 300 HP & 16 x 16 x 7, 45 pai 200 HP KEMP MERT GAS GENERATOR HOLDEV 75 L 75000 SCPH

Chilly Chily Chily Child KERIMANUELSYAVEILTATARIKA KARIFUTALA . Andria de la contraction del contraction de la c

CENTRIFUGES

BASKET 48"x30" Sharples 316 mdl. 71600 (2) 48"x30" Tolhurat Hast. C Automatic (3) 48"X24", 316SS, Automatic, W/plow **PUSHER TYPE** DeLaval, 25", 2-Stages, 316SS DISC/BOWL DeLaval, Mdl. BRPX-309, SS, vert., & Mdl. BA-00,SS

Westphalis 304 SS Mdl. SAMN-5036 Dolaval, BPRX-213, 316 SS (2) SOLID BOWLS Sharples, Mdl. P1000, P3000, P5000, P5400, (2), SS Sharples Mdl P-3400 (3) 8iro, 40"X60", 36"X72", 32"X50", 24"X36", 18"X42"

18'x28"12"'x 30" SS Podbielniak Mdi. 6000 camp. w/controls

VACUUM DRYERS

325 cu .ft. Abbe, 304 SS dbl. cone 200 cu .ft. 316SS, 6'G"x11'6", rotary 164 cu .ft. Paterson "Conaform," 316SS Dbl. cone 150 cu. ft. SS 304 SS Twin Shell 150 cu .ft. SS, & 150 cu.ft. Nickel clad 125 cu .ft. SS & CS, 4'x14', 105/90/150 psi 125 & 83 cu. ft. Bullovak SS Rotary 90, 70, 60, 50, 30, cu. ft. PK SS & G/L dbl cone

70 cu. ft. KS Titanium dbl. cone 40, & 15 cu.ft. Stokes, SS rotary ARVEWANT TO BUY YOUR, SUBRIUS EQUIPMENT PROCESSUNITS AND COMPLETE PLANTS. WE HAVE TO BUT OUR OWNIDISMANTLING CREWS

Corn Syrup/Starch Plant Liquidation

200,000 lbs/HR @ 300 pal package, boller 150,000 lbs/HR @ 700 psi package boller 50,000 lbs/HR @ 250 psi package boller 50,000 IDG/HR @ 250 psi package boller 6'x50' 304 SS rot. hot air dryer (2) 6'x61' Reunenburg 304 SS Rot. Dryers complete (3) 5'x 25' 4'x31' L. 72 tube Andreson SS rot. st. dryer 24,000 sq. ft. triple effect evap. Titanium tribes 600 sq. ft. U.S. Autojet PR/LF filter celicote ind (3) 500 sq. ft. Herselos 315 ELC ov/H filter felt

500 sq. ft. Hercules 316 ELC pt/If filter (4) 12'x15' Elmico belt CS rot. rec. filter (2) 12'x15' Elmico 316 SS precent filter (2) 1900 sq. ft. Host, C HT. Exchanger 150/75 UNUSED Nash Voc. Pumps Mdl. CL 3001 & Mdl. 9001 8'x10' Eimco 316 SS precont filter (2) 9,000 gal SS mix tank 13'x8' 6,500 gal 316 SS cone both mix tank 12'7'8''

5500 gal 316 SS mix tank 12'x6' 5HP (11) 3000 gal SS mix tank 9"x6"6" (3) 3000 gal Blaw Knox 316 SS var. tank, 6"6"x 12" 15 psi/f'V PLUS MANY MORE ITEMS CALL FOR DETAILS BUY FROM THE SITE AND SAVE

ALABAMA CHEMICAL PLANT

(3) 290 cu. ft. 310 SS rotary vac dryer systems 10'x 14" Eimeo rotary vac filter

(2) Niagara 36 H 190 filters SS (1) Late model H9 vac pump w/fuller V 300 booster Reactors: 4000 gal. G/I. hody, 100 FV/150 FV jkt. (4) 3300 gal. SS 60/30 HP agit w/coils 100 pai (1) 3300 gal. SS 30 HP, GTW, 300psi coils

(2) 2000 gal. 316 L SS, 75/200 psi jkt anks: 1500 gal. 316 L SS agit. 6000, gal. (3) 4000 gal. Monel vertical

4700 gal. G/L Plaudler Chenistor 30 psl SS Heat Exchangers from 100 to 500 sq. ft. plus many misc. items.

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5,000 GAL. DEDIETRICH 100FV/90 REGLASSED 4,000 GAL. DEDIETRICH 100/90 PSI 3,000 GAL, DEDIETRICH, 100/90, PHILA, DRIVE 3,000 GAL. RA SERIES, 100/90 TW, REGLASSED(2) 2,000 GAL. RA SERIES, 100/90 TW, REGLASSED 1,000 GAL. RA SERIES, 100/90 TW, REGLASSED

1,000 GAL. E SERIES 25/90 (4) 750 GAL. 25/90 TW, (2) 500 GAL. RA SERIES, 100/90, TW

400 GAL. E, SERIES, 25/90, TW 300 GAL. E. SERIES, 25/90, TW 200 GAL. E. SERIES, 25/90 REGLASSED, TW 100 GAL. E, SERIES, 25/90, TW

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48"x24" TOLHURST SS "BATCHMATIC" CENTRIFUCE (6) COMPLETE ... LATE MODEL.

18" DIA. 65 BARER PERKINS TERMER

60"x40" JUSTEREY 53 CONTINUOUS FLUD

G'GREO' E UBLIER OS ROTARY DRYER, 50 IP G'6882' CO COUPTEES-CUERENT ROTARY DHYEG

3-95 CU. FY. DAY MARRIARY SS RIBBON

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(18) Centrifuges 316 SS automatic be ket centrifuges complete with control and nitrogen purge

MUCH MORE !!! 30,000 Gal. 1974 Propane Tank 250

PUSHER CENTRIFUCE

DED DRYER (2) 60"x20" JEPPIREY SS VILUID RED DRYER

OF REGIS SAFIATOR BACKER MOL. 18-VCs 53" DIA, DUCCOR SURGE PURBURGER TYPEL

BLENDERS, 15 OF

1-85/12/2003, IC-0 PROFOCA CHOYARY VACUUM

4-7" DIA, DOWER CPRAY DRIVER....

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CENTRIFUGES | Delayal BRPX 309, SS, 20HP | Umraed Model B-10 Podbleiniak, Alloy 20 | Sharper AS-26, SS

(89) Gines lined & SS Reactor system complete with condensor, received and control panels. from 50 gal. to

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Drum Dryers/Flakers 11 24" dla. x 38" Buflovac SS dble. drum

dryer) 32" dis.x 108" Blaw Knox Cl dbla. drum

dryele, x 17'6" Sandvik SS beit flaker 1) 32"ele, x 17'6" Sandvik SS beit flaker 1) 36"dla,x 10" Buflovak Cl dbie, drum dryer 3) 42"dla,x 120"Blaw Knox Cl dbie, drum

dryer | 48"dia.x 28" drum flaker, chrome plated

drum 1 48"dis.x 40" Cl flaker, mfg. by Buffalo

Foundary 1) 48"dla.x 40 drum flaker, nickel plated drum, mfg. Blaw-Knox

| 160 Kg. Aeromatic, Batch, 6'x9', 56,000 | 100 Kg. Aeromatic Model ST 100, eanitary

1) Western Precipitation Model P80SSO-A, twin screw, 12" dia. x 20' long, SS constr., jckl. rated 15 psi, complete with 7.5 HP vari-speed drive.

1) New/Never-Used Joy Processor, CS, eingle screw, 16"x15" long, rated 110 psi @ 340° F., sprocket & chain drive by 1.5 HP varispeed drive.

(1) 200 Cu. Ft. Stokes, SB conetr., compit. (2) 165 Cu. Ft. Pfaudier, Double Cone, G/L, 30 877/50 pai jktd., 15 HP vari-drivs (1) 150 Cu. Ft. Blaw Knox, Nickel (2) 132 Cu. Ft. Stokes, Nickel (1) 72 Cu. Ft. Blaw Knox, SS (1) 50 Cu. Ft. Titsnium Double Cone (1) 50 Cu. Ft. Gemco, 316SS sanitary, double

(1) 37.8 Sq. Ft. Horiz. Thin Film, vac. int. & 150 psig, 304/31688 (1) 37 Cu. Ft. Gemco, SS (1) 30 Cu. Ft. P.K Twin Shell, 30488 (1) 20 Cu. Ft. Abbe Twin Cone, 30488

1) 30"x3" Bowen Leboratory w/3" cone bottom, SS constr., w/centrifugal stomizer, 3 HP blower & motor.(1)
 1) Niro lab size 32" diax2"w/2"cone w/centrif.

11 Juny 188-26, SS (1) Sharpise AS-16P, 316SS (1) Alfa-Laval SS Decanler, Horiz., Mdi. NX314 (2) Dorr Oliver Mdi. CH3O CSU "Merco," 316SS Confacts, 150 HP

Conacts, 150 HP

(1) Baker Perkins S-32 "Pusher Type," SS, 50 HP

(1) Bint 18" x 28", 316 ELC, contour bowl.

(2) Bird 24" x38", 3168S, 40 HP

(3) Sharples P-3000, 316SS, 30 HP

(1) Sharples P-1000, SS 20HP

(1) Unused Bird 36 x96, 317L SS

40" x 20" Tribuset School SS

6": 20" Tolkurst centrifuge, Kynar ilined, perf.

enilary, auto. plow & discharge, rated & s/cu. ft. @ 900 RPM, 20 HP XP.

1) Toburst 48" x 24" Batchmaster, 316SS, perf. basket, w/hydr, plow & 20 HP hydr. chow 1) Toburst 48" x24" Batchmaster, rubber lined, perf. basket, w/hydr. plow & 20HP hydr. driva lined, perf. basket, w/hydr. plow & 20HP hydr. driva lined, perf. basket, w/hydr. plow & 20 HP hydr. driva

) Western states 48" x 24", 316 SB) Fisicher 48" x 28" Suspended type, SS peri. basket, 20/10 HP) Sharples Tornado 48" x 30", 316SS, perf. basket, 40 HP XP

Alfa Lavai Model MAPX 210 T24, SS wetted

Parts
24 Starples C-27, 316 SS, wetted parts, 40 HP
11 Sharples C-20, Super-D-Hydrator, SS, 30 HP
11 Dorr Oliver Mercone Screener Model C-400 X2,
all SS, twin acrew disch., 10 HP

PARTIAL LISTING ONLY

Tohurst 48" x 24" perf. basket, 31655

65 Fitzpatrick Model FA 250, SS, 20 HP XP

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SONNEL ARE FULLY TRAINED TO

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Glass Lined
4,000 Gal. Pfaudier, 100/90 psł, TW
4,000 gal Pfaudier, 50/30 psł
3,700 gal Glascote, 50 & FV/90 psł
3,000 gal Glascote, 50 & FV/90 psł
3,000 gal Pfaudier, 75/90 psł
2,000 gal Pfaudier, 75/90 psł
1,000 Gal. Pfaudier, 100&FV/90 psł,
4RW
1,000 Gal. Pfaudier, RA60 Series, 100&
FV/90 psł, 4DW
1,000 Gal. Pfaudier, RA60 Series, 100&
FV/90 psł, 4TW
800 Gal. SS clad, 60/60 psł
750 gal. DeDiotrick, Phila drive
500 Gal. Pfaudier, 100&FV/85 psł, BH

500 Gal. Plaudier, 100&FV/85 psi, BH

Stairless Steel
4,000 Gal. 316SS, Atmos./50 psi, withcolls
3,000 Gal. 347SS Blaw Knox, 150 /50 psi
2,500 Gal. 316L SS, 75/75 psi, 150 psi int. colls
2,000 Gal. Nooter Autoclave, 316L 2000
psi, FV int. colls
2,000 Gal. Dusenberg, 316 SS,15/35 &

2,000 Gal. Disenderg, 316 SS,15/35 FV Int., 50 pai jkt. 1,750 Gal. 316SS Nolte, 1467/50 pai 1,500 Gal. 304SS, 10 HP Lightnin 1,500 Gal. 304SS, 100/30 pai 1,000 Gal. 304SS, 250/80 pai 1,000 Gal. 316SS, 50/75 pai jkt 1,000 Gal. 316 SS, 15 & FV/50, 10 HP

1,000 Gal. 316 SS, 100/3C 10 HP 750 Gal. 316SS, 75 & FV/50 psi

750 Gal. 3048S, 50/60 psi 600 Gal. 3168S, 3000psi, 10 HP 600 Gal. SS, 50 psi, 1.5 HP XP 500 Gal. 3168S, 55 & FV/55 psi

100 Gal. 316SS, 15/50 psi 100 Gal. 316ELC SS, 500/90 psi

*** SPECIAL OFFER ***

4-DRAIS SAND MILLS, TYPE PM-80-STS-DDA. MANUFACTURED 1984-85. PRICED TO SELL & CALL FOR DETAILS

MIXERS

4.5 Gal. Kneader Mester Cont., SS w/jkt. 5 Gal. AMK 304SS Jektd. Kneader Extruder 15 Gal. W.C. Readco Sigma Blade Dbl. arm 25 gal. Readco DBL/Arm Sigma Blade jktd. SS

construction 15 H.P. 80 Gal. Hockmeyer Pony, SS contacts, 7.5 HP

variapsed

100 Gal., SS, Sigma Blade, Jokid. 40 HP

200 gal. W-P CS dble arm Sigma blade, 20 HP

250 gal. AMK Kneader Extruder, Sigma

Blades, CS construc, 40 psig.trough jkt.

500 liter Welex hi intensity, SS contact parts

500 Gal. S-W Rubber Cement, CS, 2-10 HP

motors (2)
Unused 1000 Gal. Sanitary 316SS B-K Dbl. Motion
Change Can; 1008FV/165 PSi, 125HP
Littleford Model FKM-600D, SS
Littleford Model FKM-600S, SS

Littleford Model FKM-2005, SS Littleford Model FKM-2000, SS, w/choppers 7 Cu. Ft. 304SS Nauta Model MBX-70 10.6 Cu. Ft. Nauta D-105, CS Welding Eng. Model 2FV1V2S Twin screw Extruder, SS, Contacts, 150 psi Koehring mdl. 350, 40 HP NEW/NEVER USED 75/37.5 HP Hockmeyer Disperser

PLUS LOTS - LOTS MORE

TURE PROJECT (201) 390-9550

AND ASBESTOS REMOVAL WITH TER-RIFIC REFERENCES BOTH NATIONALLY

AND INTERNATIONALLY

HANDLE GLASS.

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KEARNY. NEW JERSEY

1-8' dla. x 50' Bartlett Snow Rotary Dryer, SS, 100 HP. 1-8' dia. x 50' Louisville Steamtube

Rotary Dryer, SS clad, 40 HP. 1–11'6" x 70' lg. Bartlett Snow Calciner, 316SS, 1100°C., com-

1-11'6" dia. C.E. Raymond Separator, single whizzer, CS constr.
1-24,000 Gal. Mix Tank, SS constr.,

16' dia. x 16', 20 HP, 1-20,000 Gal. Storage Tank, SS constr., 16" dia. x 14'.

LIQUIDATION OF 160MM #/YR. SODIUM TRIPOLYPHOSPHATE PLANT-

2-10,000 Gal. Storage Tank w/jckt., SS constr., atmos. int., 150 psi jckt. 1–10,000 Gal. Mix Tank, SS constr.,

13' dla. x 10', 30HP. 1-10,000 Gal. Mix Tank w/Int. colls, 13' dia. x 10', 30 HP.

1-Marley NC Tower, 88"W. x 14'6"

L. x 9'H.
1-1130 sq. ft. Micro-Pul Reverse
Jet Dust Collector, CS constr.
*Large Quantity Silos. Many Screw Conveyors Available-various sizes, CS & SS construction.

BUY DIRECT FROM PLANT SITE AND SAVE!!! CALL FOR COMPLETE DETAILS.

EVAPORATORS

(1) 1 Sq. Fl. Artislan "Kontro" Ajust-O-Film ays., 316SS (1) 1.4 Sq. Fl. Luwa Wiped Film, 316SS, 1.5 HP (1) 1,4 Sq. Ft. Luwa Wiped Film, 316SS, 1.5 HP
(1) 1.4 sq. Ft. Luwa Wiped Film, 316SS, 1.5 HP
(1) 2.5 Sq. Ft. Rodney Hunt Turbo Film 347 SS
(1) 5.4 sq. Ft. Luwa Himtruder, 316 LSS
(1) 6.54 Sq. Ft. Votator Eveparator System, 316 SS contracts, 15 pp.i & FV & Int., 150 pn.i jkt.
(1) 8.7 Sq. Ft. Rodney Hunt Turbo-Film, 304 SS contact parts, 15 pp.i & FV/150 pn.i jkt.
(1) 10.8 Sq. Ft. Luwa SS Wiped Film Evap. System, 15/550 pn.i
(1) 19.5 Sq. Ft. Votalor Turba-Film, 304 Sanit. SS FV/150 pn.i
10HP

(1) 20 Sq. Ft. Kentro Horiz. Adjust-O-Film, 316ELC, 50 psig. 15 (1) Approx 31 Sq. ft. Verl., Turbo-Film Processor, 304 SS

(1) Like New 37.8 Sq. Ft. Luws Horiz. Thir-Film Dryer, 304/316L SS (1) 40 Sq. FL Kontro Adjust-O-Film, SS constr., 20 HP (1) 47 Sq. Fl. Artisan rising Film, Hast. "C" (1) Approx 51 sq. fl. Plaudier Wiped film, 316 SS, 100/85 & FV (1) 80 Sq. Ft. Kontro Wiped Film Syst., SS constr., FV/150 pel,

40 HP
(1) UNUSED 86 sq. fi. Luwa thin film dryer horiz. 316 L welted parts, FV int., 150 pal sat steam jst.
(1) 141 Sq. Fi. Rodney Hunt Turbo-Film, 316 SS 15 pal int., 35 pal jst. 40 HP XP

BLENDERS

800 Cu. Ft. Kitd. Dbi.Rbn., CS
Approx. 486 Cu. Ft. CS, 75HP
UNUSED 460 Cu. Ft. Marion Paddie, CS, 75 HP
300 Cu. Ft. CS Dbi. Cone. 30 HP
400 Cu. Ft. CS Dbi. Cone. 30 HP
400 Cu. Ft. KS 316SS Dbi. Cone
175 Cu. Ft. Pt. Twin Shati, 316SS
150 Cu. Ft. J. M. Day Obi. Ribbon Carbon Steel Conir. 25 HP (2)
69.3 Cu. Ft. CS Dbi. Cone, 7.5 HP
63 Cu. Ft. White Shati, 316SS
150 Cu. Ft. Marion Paddie, CS
60 Cu. Ft. Marion Paddie, CS
60 Cu. Ft. Marion Paddie, CS
60 Cu. Ft. Gemco Dbi. Cone, 304SS
37 Cu. Ft. Gemco Dbi. Cone, 304SS
37 Cu. Ft. Gemco Bbi. Cone, 804SS
37 Cu. Ft. Gemco Bbi. Cone, 805S
36 Cu. Ft. Ry, 304 SS, W/lig. bar.
20 Cu. Ft. Pk., Twin shell, SS
16 Cu. Ft. Robinson Dbi. Rbn. CS
16 Cu. Ft. WC Marion SS
10 Cu. Ft. WC Marion SS
10 Cu. Ft. Howes, CS, Dbi. Rbn.
5 Cu. Ft. Howes, CS, Dbi. Rbn.
5 Cu. Ft. SS, Dbi. Cone W/liquid-sqi(ds bar
10" P-K zig zag 10" P-K zig zag

FILTERS

Pressure Leaf 1-562 Sq. Ft., 316ELC, Hercules, 28 leaves 1-512 Sq. Ft., 316SS, Nlagara, 21 leaves

1-400 Sq. Ft. R/L Sparkler 1-327 Sq. Ft., 304SS, Ind. Filter, 11 leaves 1-320 Sq. Ft. Durco 316 SS, 11 Leaves 1-259 Sq. Ft. Pronto Mdl. #3259, 75 palg

1-200 Sq. Ft., SS, Hercules, Horiz. 1-191 Sq. Ft. Enzinger, SS, Vert., 75 pel 1 - 157.64 sq. Ft. Sparkler model 55-5-28, 316SS 1-150 Sq. Ft. Horiz., 12 Vert. Leaf 316SS

1-135 Sq. Ft. Ni, Bowser, Vert. 1-35 Sq. Ft. Hercules Model 5, 316 SS, horiz, tank vert leaves 50 psi 1-Sparkler MdI #33D9 SS constr. 1-Sparkler Mdl.#18 D 12, SS const

1-Sparkler Mdl.#18 D 4, constr.

1-Sparkler Mdl.#33S 28, constr.

Rotary Vacuum

x10', sanít

1-56.5 Sq. Ft. KS, Inconel 600 1-56.5 Sq. Ft. K-S, 316SS, flexibelt disch. 1-87.92 Sq. Ft. Felnc, SS wettod parts spring disch., 56" dia. x 6' face drum 1–132 Sq. Ft. Dorr Oliver, 304SS, maxibel

1-200 Sq. Ft. Elmco, 316SS, 8'x8' 4-250 Sq. Ft. D.O. 316L SS Precoat, 8"

1-250 Sq. Ft. K-S 316SS, coil disch. 1-300 Sq. Ft. Eimco, 316SS wetted parts, precoat type w/knife disch., 10" dla. x 10" drum, compit. w/control panel & aux. equipment

1-314 Sq. Ft. Elmco, precoat disch., 316SS 1-400 Sq. Ft. Elmco, CS, Precoat 1-500 Sq. Ft. Elmco, 316SS, belt disch. 1-3'x1' 31655, knife disch.

1-3'x1' Dorr Oliver, FRP w/receiver & Nash H4 vac. pump, 10 HP 1-3'x 1' K-S comp. sya., 316 SS Flex-belt disch

COFFEE PLANT LIQUIDATION

(1) Mdl. #DASO-5 Fitzmill w/15 HP motor, on stand. (1) Mdl. #D-6 Fitzmill w/15 HP main motor à 2 HP on stand. (1) Mdl. #2DH Micro-Pulverizer. (1) Mdl. #3TH Micro-Pulverizer, 8S, w/40 HP mein motor à % HP screw

motors. (1) Micro-Pulsair SS Reverse Jet Dust Collector, Model #84-8-8-20. (1) 8" g 42" Votator Scrapped Surface Heat Exchanger, w/5 HP motor &

ickt.)
48" Sweco Single Deck Screen w/cover, SS conetr., 1 HP
12" w. x 8" ig. Witte Vibrating Conveyor, SS, w'cover, 2-deck.
2" 8" Witte SS Fluid Bed Dryer w/perf. piate.
32" W. x 13" Sandvick Belt Flaker, SS, 5" cooling section.
) Stokes Freeze Dryer System, compil. w/prebreaker, micro-vac. & York chiller.
Helty Dislateration, 30 HP Model #RP12-K122.

(1) Stokes Presses Dryer System, Compit. Wypresissor, mixed York chiller.

(1) Relix Disintergrator, 30 HP, Model #RP12-K122.

(2) Jones Dewatering Presses.

(1) 1500 Gel. 83 Mix Tenks, asnitary fittings.

(2) 1500 Gel. 83 Mix Tenks, asnitary fittings, 3 HP Lightinin.

(1) 2000 Gel. 83 Mix Tenks, asnitary fittings, 3 HP Lightinin.

(2) 2000 Gel. 83 Mix Tenks, asnitary fittings, 3 HP Lightinin.

(2) 2000 Gel. 85 Storage Tenks.

(3) 1800 Gel. 85 Jektd. Mix Tenks, asnitary fittings, 3 HP Lightinin.

(3) 1500 Gel. 85 Jektd. Mix Tenks, asnitary fittings, 160 pel jekt.

(3) 1500 Gel. 85 Mix Tenks, 3 HP Lightinin.

(3) Gel. 85 Jektd. Mix Tenks, 3 HP Lightinin.

(4) Gellin Homogenizer, Kl. 81 BS, Type 620 HQ, 8S.

(4) 22' Dis. Spary Dryers, complete system.

FOR ADDITIONAL INFORMATION-CALL IDM TODAY...

ATTRACTIVELY PRICED

Plaudler, Wiped Film Evapor. 316 SS wetted parts ASME Coded,. Jacket rated 100 psi w/internal vacuum. Complete w/flange mounted motor to Plaudier TW drive w/mechanical seal, lubricator & integral heat exchanger.

1 - Approx. 51 Sq. Ft.,

Call today for more details.

MANY MORE ITEMS IN STOCK-CALL IDM TODAY!

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F.O. BOX 388 SOUTH DIVER ALL CONTROL (201) 390-9550

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November 3, 1986

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ILLINOIS LOCATION AND SAVE! LARGE **POLYSTYRENE** PLANT

LIQUIDATION SALE

21875-Bins. 176 cu. ft., S/S, cone bottom flat top. (4) 21891-Bins, 450 cu. ft., C/S, epoxy tłnod. (8) 21904-8ins, 450 cu. (t., C/S, epoxy Nned. (6) 21905-Bins, 500 cu. ft., C/S, epoxy lined, flat lop, coni-

cal bottom. (4) 21918-Worthington cent. pump, C/S, 15HP, 200 GPM at

21906-Edw Renneburg Rot Dryer, S/S, steam heat, 10

HP. (4)
21881-Hesters, C/S steam, type BNF 2420 (8)
21914-Flotronics bin vent, iBlers, 122 sq. ft., 12 bags.
21888-Kalron Feeder twinscrew, S/Smod.5400-150 (4)
21901-Sparkler fifter, 352 sq. ft. C/S, mod. VR-32-32. 21882-Screw conveyor, 304 SS, 7" dis. x 11L, 1.5 HP. 21888-Strong Scott Rib Blender, 25 cu. ft., 5 HP. (3) 21920-Wolex extruder 6", 30:1 L/D, 400 HP. 21870-Welex extruder 6", 30:1 L/D, 600 HP. 21876-Consir pelietizer, 8/S, mod. 1024, 40 HP. (2) 21874-Water bath, S/S, portable, (4) 21887-Ross Static Mixer, 304SS, 3"x6 element. (4)

21917-Ingersol Rand pump, in-line pump, C/S, 30 HP. 21915-Goulds, C/S turbine pump, 200 HP. (2) 21913-Worthington cent. pump, S&S, 2 HP. (4) 21912-Union pump-inline, S/S, 7.5 HP (2) 21899-Plaudiar Reactor, 1,500 gal., 316L SS dimple jkt. 21896-Plaudier Reactor, 10,000 gal. 316L SS clad, 60

HP.(4) 21909-Plaudler Reactor, 15,000 gal. 318L 59 dimple jki. (3) 21897-Metal Arts Corp. vessel, 17,000 gal. vert. 317L

SS. (2) 21910-Tank, 840 gal., flat top & bottom. 21920-Modern Welding Tank, 4800 gal. horiz. rubber

lined. 21878-Gorman Rupp pump, centrifugal C/S, mod. 82EZ.(2) 21871-Profex extruder 8", 30:1 L/D ratio, 600 HP. 21892-Buifalo blower, size 30, C/S, 10 HP (3) 21908-Bullslo exhaust fan, size 36, type B, 15 HP. 21880-Sular Biù Blower, C/S, 46 HP. (4) 21922-Bulfato blower, type 40-3CB, 40 HP. (4) 21894-Bulfato blower, mod. 45-3CB, 75 HP. (3) 21883-Bird, 32x 50 centrifuge, 80:1 gearbox. (4)



21883-Bird Centriluge, 32x50, 80:1 gearbox.

21893-Environeering scrubber, mod. A33-14000 21895-Tank, 850 gal. vert. coal tar epoxy lined. 21911-Tank, 54000 gal. vert. C/S epoxy coated flat

. vert. C/S epoxy, flat bot. conical top. 21898-Brighton Corp. Tank, 12,000 gal. vert., solid 316L \$9. (5)

2 1902 - Worthington compressor, mod. 488-2, vort. 125 psi. (2) 21879-Sweco sifter 60", mod. LS60S88, 2.6 HP. 21923-Kason sifter 60", mod. K601SS, S/S, 1HP.

21884-Flotronics Cyclone mod. FTHEC370-T, 304 S/8 12" dia. dish top. (3)

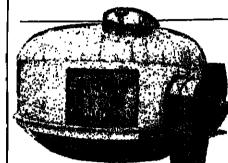
AARON BUYS COMPLETE PLANTS FOR LIQUIDATION CALL LES OR JERRY COHEN TODAY: (312) 350-2200

FILTER PRESSES

19846-Shriver P&F filter press, 12"x12" elum. plates closed delivery, 23 chambers. 20534-Sperry Filter Press, 30", alumn. 20539-Sperry filter press 30", 35 Aluminum plates, 357 sq. 15370-Shriver 32" x 32", polypropylene, 27 plates, ratcher

closing. 15929-Shriver ALP, plate 8 frame, 18 36" x 36", S/S ra cessed plates. 19799-Clow/Bethlehem filler press, 36", recess plates, 20 chambers. 20076-Sperry filter press, 36", cast iron plates, closed deliv

19462-independent filter press, 42" x 42", polypropylene 4 eye closed, 34 chambers. 20550-Sperry filter press, 42" Ehcl closer, 41 glum. plates



21772 Drucknutsche (Rosemund Type) Pressure betch Filter 117" Dia., 75 Sq. Ft., Jacketed, agit. 16 HP, Side Discharge..

FILTER-ROTARY VAC.

15828-FE,inc. 36" dia.x12", S/S, string disc , 1/2 HP. 17477-FE, inc., 3" dia x 5", 1316SS, belt disc , vac pump. 11177-Dorr Oliver S/S, 5' dla x 6'L. 11653-Oliver T-316SS, precoat 6'3"x8" 19431-K S. flexibell, 6' dia. x 6' face, 316SS. 16392-Eimco belt filter, 8'x10', steel drum, w/Nash pumps 15827-Amelek, 8" dia.x14"0" face, maxi-bell, S/S. 7936-Eimco, 316SS, 10' dia x 14', knite discharge. 17283-Improbell filter, 12' dia x 12', 304SS, Nashvac. 20251-K.S. T304, vacuum filter, 12' dia x 14', 304SS. 20323-Dorr Oliver 11 6"x16" lace, S/S coni parts

1486-Eimco 10'x10'rotary vac. tiller.

PRESSES

UNUSED Manesty Express, 10 ton, 20 stations. 11602-Collon Press mod, 260, 31 die stations, 1800 TAB. 21382-FJ Stokes rotary tablet, 15 station, 10 ton. 21418-Manasty rotary tablet, 16 station, 10 ton. 14425-Stokes Tab Press mod #551, 51 station, 4 ton. 21417-FJ Stokes rotery, 27 station, 4 ton, double sided. 503881-Komerak Greaves, mdi. 75MSS briquetting press 20.5" dia. x 4.5" face. 13392-Fitzpatrick Chilegnator, 50 HP, mdi, HA-50-30-210

8802-Stokes single puchh press, 900-530-1 (T4), 12 ton. 17224-Dorst compac., senes TPA15, 20 tons. 10890-Stokes, mdl. R-4 press, 20 ton.

WE WANT TO BUY YOUR SURPLUS EQUIPMENT AARON PAYS TOP DOLLAR \$\$ CALL TODAY!!!

DUST COLLECTORS 21125-Fabri-Jet Jdl SQ9-48 bin vent. 42 sq ft

6398-Mikro dust collector, S/S, 63 sq. ft., mdl. 9-6-100, 1 153-EVO. bin vent. 72 sq. 11 . S/S. 5 HP 20253-Unused EVO pulse jel collector, mdi 848F009C, 90

21 192-JH Day mdi RJ-18RJ36, 125 sq. ft., CS, 3 HP 21222-Fabri Jel, mdl. SQ18-80, 151 sq. ft 20398-Pulse jet collector, "FlexKleen," mdl. 58CT24 AV II

w/175sq ft., cloth, C.S. 21286-Miliro dust collector, 285 sq. ft., S/S. 20256 Unused EVO Corp. pulse jet dust collector, mdl. 99BF030C, 350 sq. ft.

MS049C10, 575 sq. ft. SCREENS

21203-Sprout Weldron sitter, D10, 6 decks 21150-Sprout Weldron, D10, 1 HP, 10 decks, S/S cont. 21167-Sprout Waldron, D10, 2HP, 10 decks, S/S cont.

:0255 Unused EVO Corp dust collector, shaker type, mail

UNUSED CENTRIFUGES

21593-Sharples P5400 Sanitary Centrifuges w/200 HP motor, 25 HP backdrive, gearbox, 5" pitch conveyor, CIP, control panel (2) LATE MODEL

CENTRIFUGES

20827-Bird, 18"x24" steel, conical bowl 20826-Bird, 24"x38" steel, con, bowl, gearbox 20819-Bird, 24"x38", S/S, 15 degree, contour bowl. 20364-Bird 32"x 50", SS T316 contour, 75HP. 12883-Bird 36"x96" contour, 10 deg., T317 ELC. 20137-Alfr Lavel, NX 418-831-60, 316SS, gearbo 17308-Dorr Oliver, 304SS, Marco mdl. 16L, 30 HP 13565-Sharples, mdl. P 600, pearbox, motor. 19767-Unused Sharples, 3 phase, P3000, S/S, carbide 20407-Sharples P2000 316SS, 20 HP drive motor. 21359-Sharples P3000 w/gearbox 20686-Sharples P3000, 52:1 gearbox, S/S casting. 21725-Sharples, P3400, S/S, gearbox & motor 19249-Sharples, P5400, 316/317SS, 200 HP, gearbox

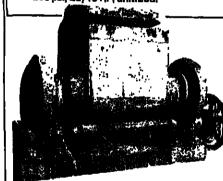
CENT-BASKET VERT. ?1408-Dalaval 22" x 16" perl. basket hyd. drive.

5815-Delaval Mark III. peri basket, 40"x24", 316SS, 30 HP, hydr., drive. 19446-Sharples Sludge-Pak, SP-5500, 40"x24" baskot

ROTARY VAC DRYER



22210-Bertrams, S/S 6'dia, x 12' dished heads, half pipe coll jacket 200 psi, 20/13 HP, unitized.



21459-Baker Perkins Mixer, dbi. arm, C/S, 300 gal. Geared both ends, 100 HP, mod. 18JUMMZ.

FILTER PRESSES

19846-Shriver P&F filter press, 12"x12" slum. plates. closed delivery, 23 chambers. 20534-Sperry Filter Press, 30", alumn. 20539-Sperry filter press 30", 35 Aluminum plates, 357 sq. 15370-Sbriver 32" x 32", polypropylene, 27 plates, ratchet

closing. 15929-Shriver ALP, plate & frame. 18 36" x 36", S/S re-20076-Sperry filter press, 36", cast Iron plates, closed deliv

19462-independent filter press, 42" x 42", polypropylene. 4 eye closed, 34 chambers 20550-Sparry filter press, 42" Encl closer, 41 alum. plates

Special Sale

MUST MOVE STAINLESS TANKS 12,000 GAL., T304SS, 12'Dia.x 14' high, flat bottom, open top (16) PRICE \$8000 ea. FOB PA #20655

TANKS-S/S 21283-Tank, S/S, vert., 1200 gal., 6' dia.x6', flat top & bot. 20651-Tank, SS, 9000 gal., agit., 12' dia.x 14'6" H. 20655-Tank, SS, 12000 gal., 12' dia. x 14', flat bottom.

open top. 17043-Jos Oat horz , tank, 30485, 16,000 gál., 12'6" dia x

15475-Brighton, 4000 gal., 316SS, vacuum, 20287-GH Hicks, 4000 gal., 316 SS, pipe coli jid. 20923-Richmond Eng. Reactor, 4600 gal., T316 standad Plaudier 10,000 gal. reactors T316L, 100 psi int, 180ps Pfaurlier 15,000 gal reactor T316L, 100 ps.int , 200ps.i MIXER/EXTRUDER

17654-AMK 25 gal. Mixttruder, Sigma, ST 7.5 HP. 18298-J.H. Day 25 gal. Dispersion, 25 HP variman, 10H

21334-Ross 40 gal., S/S hot oil jkt., Sigma 6" disch str 19826-AMK 50 gal ST, jkt., Sigma. 19421-AMK 75 gal ST, jkt., Sigma, 10" disch. screw

20116 AMK 150 gal., ST, Sigma, 15HP/10HP 503527-New Agron 300 gal., T30455, mix extruder, \$9 jkt , up to 200 HP main, 75 HP hyd. screw. STILL INSTALLED ... CALL NOW!

21350-B.P. 500 gal. Sigma steel, ik 125 psi,150 HP, Hyd. tilt

MIXERS - PLOW 503755-Littleford, FKM 600D, SS jacketed, 25 HP 20754-Littleford, FKM 3000D 65 CF, S/S, full jacket

20829-Littleford FKM 4200D, S/S. 87 cu. ft. JKT. MIXER RIBBON

20276 Read ribbon blonder, 14 7 cu. lt 304SS, 3HP 20616-Unused Day, 316SS, 23 cu II , 5HP. 20189-Robinson, 25 cu. ft., S/S, jacket, 10 HP 20985-Int 134 cu. ft. S/S dbl. ribbon. 5 HP. (4) 20212-Haas ribbon, 30 cu. ft., S/S, 15 HP 19266-Ribbon Mix 80 cu 11. T304 SS, 5 HP (4) 9566-Howe, 115 cu. ft., sanitary S/S, double spira 20983-Strong Scott blender, 130 cu. tt., 30455, 25 1798

21124-Ribbon Blender, 304SS jkt., 160 cu. ft., 30HP 20814-Unused JH Day ribbon, S/S 270 cu. ft., 25HP 21114-JH Day ribbon blender, S/S clad, 75 HP, 480cul

JUST PURCHASED 22344-Christian ribbon mixer, 36 cu. ft. steel jacket.

7 5 HP, unitized 22342-Sheet extrusion line, Prodex 4 5", 24:1 L/D, 50 HP, shoot dio, chill roll stack, Famco shear. 22343 NRM Turrol Windor, 48-46 w/2 adjusto &

notora, 1 HF 22346- Shoot Coator, 54" steam heated 22345-Berringer 4.5" screen charger w/hyd. pump 22277- Fitz patrick, D6, S/S screw feed, 7.6 HP motor 22275-Groon 60 yat., S/S 25 psl. 22271-Will-Flo 226 gel., S/S, jkt. 50 ps 22276-U.S. Bottlers B-2 Vac Filler, S/S 22267-Thermo King ratiroad car reirigeration system



9'9" long, hortz, 6 HP, unitized (2)

22252-UNUSED Bins, 4'8" OD, 9/8 75 ou. ft. (6) 22257-UNUSED Tank, 100 gal., T30488, 4'00, 9t 22253-UNUSED Tank, 550 gal., T30488, 4'00, 9t 22258-UNUSED Tank, 1200 gal., T30488, 6'd as 7't pt 22255-UNUSED Tank, 1800 gal., T30488, 6'd as 7't pt 22264-UNUSED Tank; 3,000 gal., 130458, war has

21'H, coll. 22258 Heat Exchanger, 40 sq. ft., 12" QS ittel. 3818 22213-Sweco, 48" single dack, 5/S (5) 22214-Nisgara, mod. 320-32, 350 sq. ft. 36"

JELAVAL MAPX-207 S/S

BRO 24x60 ST/CCF design WESTFALIA SAMR 5036 SS 15 HP

WARPLES AS-16,16V,26 S/S clar./sep. (Rebuilt)

MKER PERKINS HS-10W S/S "Lab" peeler

DELAYAL ACVO Disc/Nozzle SS 20 HP KRAUSE-MAFFEI 18.5" Pusher S/S (Rebuilt)

HARPLES P-3400, 4000 SS horiz, solid bow UFA-LAVAL NX-214SS DECANTER 20 HP

IARPLES 48"x30" T-1600 AUTO 316 SS (2)

IARPLES Mark 3 14" SS perf. auto basket

MIXERS/BLENDERS

4K 2, 10, 15, 75 cu.ft. SS Twin Shell w/bar

300 gal. J.H. Day Pony Mixer Steel w/can

LITTLRFORD 42 cu. ft. S/S jkt. w/choppers

(2) Vileco 100 cu.ft. S/S Nauta Mixers

, 100, 300, 750 S/S dbl. arm w/drive

120,135, 155, 250, cu.ft. dbl rib S/S

5 20, 80, 70, 320 cu. ft. S/S dbl. cone w/drive

REACTORS 20252-Unused Reactor, 600 gal., 304SS dimple littl. 10138-Plaudicr, 800 gal., 7-316 L SS, 55 PSI mt/150PS. 20928-Brighton, 4000 gal., 8' dla. x 10', 318 ELC S/S 20456-Roactor, 4,000 gal., 316 S/S, 8' dla. x 7'3" st.ste

DRYERS

Patterson 49 cu. it. rot. vac. cyl. S/S 3'x 7' P/K 5, 10, 370 cu.ft. SS ilq-Sol. Processor CUSVILLE 8x45 SS Rot, Hot Air-Steam 20996-AMK 30 gal. S/S, jkt. Sigma, 7.5 HP Man, 6 HP WHEN 4'S" No. 2 TOWER SPRAY DRYER S/S GAS NOZZLE -100-10,000 gal. G/L Tanks & Reactors pray Dryer, Bowen 30" lab, Niro 48" utility S/S

VIDEX WAREHOUSE SPECIAL 17136-AMK 120 gal., ST Sigma, 11.5" screw. 14832-AMK 150 gal., S/S, Sigma 15HP main, 10HP socia 19494-AMK 150 gal., S/S Sigma, 50 HP main, 10HP socia SAVE Baker Perkins 4" Twin Screw Cont. Poly con Reactor/Mixer PLANT SITE SPECIALS

SPECIALS
SI's12" Bird horiz, solid bowl cent. stl.
Stanskel 8x80 Rot Hot Air Dryer w/Burner, C/S
80 gal. J.H. Day Pony Mixer Steel W/Can
200 gal. Plaudier G/L reactor w/agit.
Bird 40x80 316 S/S Cent. 114:1 100 HP
Falc. 5'x7' S/S Rot Vac filter
150 cu ft. Munson Mixer S/S (ktd.

180 to Francisco (1800) 1800 (22,500 Gal. Tank/Silo 88 Vert 12 ft. x 24ft.

Stokes 73 sq. (f. S/S vac. shelf dryer B/P 5, 16, 50, 150 DAL. STL. D/ARM MIXER JKT. Plaudler 10,000 gat. G/L Reactor 250 gal. S/S Reactor 30#/125# jktd. w/sqlt WE HAVE MANY MORE ITEMS—LET US KNOW WHAT YOU NEED

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CALL TODAY!

SPARKLER 352 sq. (t. S/S Mod V-R-32

2.5'x 13' S/S Vacuum Belt Filter

300 Gal. Groen S/S Kettla (jkt)

35,50,150,300 sq.ft. Press Leaf S/S

SPARKLER 18-D-55/S Vert. Tank Press Leaf 60#

TANKS/REACTORS

1,200 GAL, T-316 SS REACTOR 30 75/# JKT, w/AGIT.

MISC. SPECIALS

29,000 GAL. HORIZ. 316SS Tanks 40# (2)

12000 Gal. Horiz SS w/Top Agit, DH. Hds. 2900 Gal. 250#/FV-85#/jkt. 15HP

30,50,150 Gal. \$/\$ Reactors 100#/75#

16,000 gal. 304 SS vert. w/coil & agit.

SIMPSON 11/2F, 3F, S/S MIX MULLERS

150 cu. ft. P/K Twin Shell stl. 10 HP

Pk 10" S/S ZIG ZAG Blender 50 #/cu. ft.

Niagara 24 sq. ft. Press. leaf filter \$1\$ 200 gal. \$1\$ reactor 150 #/150 # w/aglt. 200 gal \$5 vacuum recelver Foremost HD-6 Granulators 14x18 (3) 108", 80" 54", 41", 32", axtraion shaet lines Miro-Pulv 1 3H \$5 5 HP w/acrew feed M/G Homogenizer 250 M12-8 TBS (8000 PSI) Patterson, Abbe 3,5 cu. ft. \$73 dbl. cone vac. dryera Stokes 73 sq. ft. \$75 vac. shalf dryer

18",24",36",42"P/F Presses C.I. Poly or S/S SPARKLER HRC 150, 200 S/S Horiz. Press. Leaf

"SOME 1986 BARGAINS - SAVE WITH CONFIDENCE" "SOME 1986 BARGAI
BLENDER/DRYERS
1-100cu.ft.5/S.Dbt. Ribbon Blender-Jktd. 100 HP
1-175cu.ft.Dbt. Ribbon Blender-Jktd.
1-140cu.ft.5/S.Dbt. Ribbon Blender-Sanitary, 80, 40
1-141cu.ft. System MBX 1410 "Neute" Blender-304 S/S
1-121cu.ft. Manson S/S Blender-Sanitary
1-151cu.ft. System MBX 1410 "Neute" Blender-Sanitary, 40
10-16cu.ft. MBX 1410 "Neute" Blenders 8/S-30, 10,5
10-50c.ft. MBX 1410 "Neute S - SAVE WITH CONFIDENCE:

1-12 Sg. Ft. Plaudier wiped Film Evaporator-316 \$/\$

1-14" Strong Scott "Turbulkar-\$/\$, Jkkd.

10-Modet 43 B Stokes Granulstors & Tornado Mila-\$/\$

3-Wyssmont \$/\$ Turbo Dryers-L-18, N-18, S-32

20-48" X 44" Tolhurst R/L B.O.M. Cantriluge-40",30",20",12"

56-5000 gal. \$/\$ Reactors-2000, 1000 down to 1 gal.

1-Modet DASO-6 Fitzmill-\$/\$, variable speed

MISC, SPECIALS-STOCK

2-160 sq. ft. Model 24-4 CARBONE POLYBLOC COND

30-56" Bitter Passass wildyd, Closure-42",38", 30"

2-160 sq. n. Model 24-4 CARBONE POLYBLOC COND 30-56" Filter Preseas w/Hyd. Closure-42",36",30" 30-2,000 gal. Plaudier G/L Reactora-500,300,200,100,150,20,1 gal. 3-30" Bowen S/S Sp. Dryer w/Dust Collector-6/5 1-ALPINE mod. MP132 Classifier w/Dust Coll. 1-10.6 Sq. Ft. Thermovac Freeze Dryer- Complete w/Stoppering Mikro Pulverizera-1W, 1SH,2-DH(9),3TH,3W,4TH,6MA 30-16"X40" Three Rolf Mills-13"X32", 9"X24",5"X12"(3),4"X8"(12) 28 Reactor-2015 Ft. Sel.-1 MK F NEW.

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PACKAGING EQUIPMENT (FILL, CAP, LABEL) STPURCHASED(4)Strong Scott 87 of Sanitary SS Ribbon Blenders hree (3) Marion 60cf Samitary SS Blow Blenders Que (1) J.H. Day 54 cf Sanitary SS Jktd. Ribbon Blender One (1) Strong Scott 45 of Senitary SS Ribbon Ble /(4) Marion 32 or Sanitary SS Plow Blanders Me (5) Filamille, Screw Feed Model DASO6 w/10HP Tro(2) Ross 100 gal SS Double Planetary Mixers

Thiny (30) Hoover Tote Bins, Stackable aluminum CALL OR WRITE FOR NEW BROCHURE

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Tanks: 250-1400 Gal. storage & mixing, 8/8 & fiberglass 5000 Gal. 304 6/8 atorage tank, vertical, closed, dished hds. (2) Richmond 3000 Gal. 8/8 Reactor, 60/40 PSI, 50 HP 2-Spd. Richmond 3000 Gal. 8/8 Reactor, 60/40 PSI, 20 HP. (3) Plaudier 30 Gal. 8/8 Reactor, 60/90 PSI, 11½ HP XP V/8. Hercules 508 Sq. Ft. "Roto-Jet" Filter, 316 S/8, 50 PSI. Jacobson 80 SF-11 "Universal" Hammer Mis, 100 HP. (2) Entoleter Type Ells "Centrimit", 48° Dis., 316 S/8, 150 HP. Simpson "Rotex" model 861 Sitter, 318 S/8, single deck. Fitzmill, 316 S/8, No. DKAS018, 20 HP. Hoko-Filte Soraw Dryer, 18° Dis. x 20' L., C/8, JkL. trough. Chromalox 200 KW Hot Oil Unit. (ALL XP) Stering 12 KW Hot Oil Unit. Chromatox 20 kW Not Oil UMI (ALL XP)
Sterling 12 KW Holl Oil Unil.
Hockmayer 60/25 KP High Speed Disperser 8/8, XP#2 Spd.
(3) Susemeyer model 8RS Send MMs, 30 HP XP.
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Reliable 6"x12" Two Rell Mill, 5 HP.
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110 Cu. Ft. C/S heavy-duty ribbon blender, jkt. 20 HP.
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J.H. Day "Nauta" Blender, 21, Cu. Ft. 318 S/8, MBX
Votstor (2) 4"x48" L. Tubes, 316 S/8, 16 HP.
Dor-Osver "Web-Trof" 6"x8" Hot. Vac. Fitter, 318 S/8.
Crandall 5-Gal. subsurface weigh-type filler, \$/8, model F-2.
Turbs-Film 1.13 80, Ft. Lab eveporator, 315 \$/8, 1 HP complete.
Nichots/Nor 10 ft. Dis, Spray Dryer, 129 \$/Hr., all 5/8.
Baker-Perkins & Resedoc dis. am mixrar; 24/bo36 gal., C/8, 9/8
Heat Exchanger 488 sq. ft., 304 8/8, 75/15 pal.
(2) Rietz extructor, UNUSED Model PB-10, C/8, 20 HP
(4) Rietz extructor, UNUSED Model RB-12, C/8, 10 HP

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SELECT used machinery

LARGE BIRDS

(12) 40" x 60" Bird decanter, 316 S/St, 15/3 deg. contour, 5" pitch, single lead conveyors w/Stellite hard surfacing, 80:1 gearbox, 100 HP V-belt main motor drive. New late 60's. Excellent condition. Limited Use. Immediately Available from

(2) 32" x 50" Bird decanter, 316 S/ST, 15/3 deg. contour, 5" pitch, single lead conveyors w/Stellite hard surfacing, 80:1 gearbox, 75 HP V-belt drive. Excellent condition. Limited Use. Immediately Available from Stock.

WYSSMONT TURBO DRYER

PFAUDLER 1500 gal. S/S Reactor M G 1000, 2000, GPH HOMOGENIZER 3000 psi. Stainless Steel, mdl L-12, steam 65 HP MODULATIC Boiler 250 psi Gas Fired heated, 48" dla S/ST trays & sides w/heater controls. 6'6"x 78' Autoclave 150# w/track QOD -FITZ Mills S/S D, D12, FAS012 & Chilsonators 7'x(any length) AUTOCLAVES 100# Code W/Track -100-10,000 sq.ft. Ht./Exchr's S/S & C/S

> VACUUM DOUBLE DRUM **DRYERS**

(2) Blaw Knox designed double drum dryers, 18" x 48" & 36" x 120", chrome plated, each w/vacuum chambers & vacuum pump package. Excellent condition. Ready to Ship.

WYSSMONT DRYER Model N-22, 8' dla trays 22

high, with stainless steel contact parts. May be shipped in one piece. Steam heated.

ROTARY FILTERS Ametek 8' x 12' rotary w/belt

discharge, 316 stainless, new 1974 - Excellent condition. -Ametek 5"x 81/2' rotary w/belt discharge, 316 stainless. New 1974 - Excellent condition.

STAINLESS DRYER

Louisville stainless steel steam tube dryer, 8' dia x 40', stainless steel clad shelf w/stainless steel steam tubes.

Also Available:

Roto-Louvre mdl 900-32, 9' dia x 32' long, steam heated, 30 HP motor, all fans & Flex-Clean dust collector.

CRYSTALLIZER

Titanium contact parts, 8000 ibs p/hr capacity. New 1976. Complete and still installed.

RAYMOND ROLLER MILLS ★ ★ ★ Just Purchased ★ ★ ★ (3) Raymond high side roller mills,

model 5057, double whizzer separator, fan; feeder, cyclone, duct work & bucket elevator.

LARGE SHARPLES SUPER DECANTERS

(2) Model P8100 Sharples Super Decanter, 316 S/ST, carbide tiles. 250 HP main drive, 126:1 gearbox w/backdrive. New 1979. Complete. Excellent Con-

FLUID BED DRYER

Jeffrey fluid bed dryer, 5' x 20', 304 sanitary construction, complete installation including fans, dust collector, S/ST scrubber &

EXCELLENT CONDITION

INDUSTRIAL FILTERS

) Industrial Filter Sysytems, 600 200 sq. ft. each, dry cake discharge.vulcanized rubber lined tank w/316 S/ST filter leaves. completely automated w/computer controlled actuators. Like New Condition

RESIN REACTOR

(1) 8500 gallon 316 S/Tt reactor, 30 PSI/full vacuum internal, 15 PSI jacket, 45 PSI 316 S/ST colls, 10/15 HP 2 speed turbine agitator, S/ST overhead condenser. New 1977. Still Instailed. Excellent condition.

STRONG SCOTT

SOLIDAIRE DRYERS Model SJS-24-16, 24" dia x 16' long, 304 stainless, dimple jacket, 50 HP vari drive.

Model SJS-20X16, 20" dia x16" long, 316 stainless ateel, jacketed. Model SJS8X52, 8" dia x 52" long stainless, jacketed, pliot size. Stainless steel mdl SJS-36-22 w/lacket & 40 HP drive

JUST PURCHASED Link Belt Roto-Louvre Dryer10'3'

' x 36' long, mdl #1003-36, complete system incl 50 HP drive, firebox w/20,000,000 BTU gas burner, all fans, duct work & controls, multi-cyclone collector & Sly 30,000 CFM baghouse. Excellent Condition Still installed. We will load - Call for FOB Pricing

AMETEK ROTARY PRECOAT FILTERS

(1) 2' x 3', T304 sanitary stainless, complete station w/vacuum receiver, pump, mix tank & Nash vacuum pump. Rebuilt. (3) 10' x 16', 316 stainless steel, 100 HP Roots vacuum pumps.

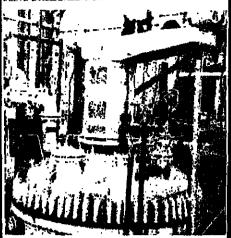
(1) 3' x 3', string discharge, 316 stainless, incl S/ST agitated through, vari speed mtr, vari speed dry on drum, 316 stainless Sihi vacuum pump. Excellent condition.

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CHEMICAL MARKETING REPORTER

November 3, 1986



KETTLES-REACTORS, SS

30,000 gai. 3046\$ fermentore, 14" x 24", 25 psf/vac 30,000 gal. 30458 tertile, 16 pel jkt., agit.

5,000 gal. 30458, alm. int., 75 pel jkt., agit.

4,100 gal. 30458 kettle, 16 pel jkt., 5 HP agit.

3,500 gal. 30458 kettle, 20 pel jkt., 7½ HP agit. (2)

2,500 gal. 30458 kettle, 1ktd., 5 HP agit. (3)

1,500 gal. 30458 kettles, jktd., 5 HP agit. (3)

1,500 gal. 7fauder 3161 SS reactor, FV /180 pel jkt., 5 HP agit. (2)

1,150 gal. 30458 reactor, 15 pel jkt., 5 HP agit. (9)

1,150 gal. 30458 reactor, 75 mel/Sci jkt. (5 PP agit. 900 gal. 30458 reactor, 75 mel/Sci jkt. (5 PP agit. 900 gal. 30458 reactor, 75 mel/Sci jkt. (5 PP agit. 900 gal. 30458 reactor, 75 mel/Sci jkt. (5 PP agit. 900 gal. 30458 reactor, 75 mel/Sci jkt. (5 PP agit. 900 gal. 30458 reactor, 75 mel/Sci jkt. (5 PP agit. 900 gal. 30458 reactor, 75 mel/Sci jkt. (5 PP agit. 900 gal. 30458 reactor, 75 mel/Sci jkt. (5 PP agit. 900 gal. 30458 reactor, 75 mel/Sci jkt. (5 PP agit. 900 gal. 30458 reactor, 75 mel/Sci jkt. (5 PP agit. 900 gal. 30458 reactor, 75 mel/Sci jkt. (5 PP agit. 900 gal. 30458 reactor, 75 mel/Sci jkt. (5 PP agit. 900 gal. 30458 reactor, 75 mel/Sci jkt. (5 PP agit. 900 gal. 30458 reactor, 75 mel/Sci jkt. (5 PP agit. 900 gal. 30458 reactor, 75 mel/Sci jkt. (5 PP agit. 900 gal. 30458 reactor, 75 mel/Sci jkt. (5 PP agit. 900 gal. 30458 reactor, 75 mel/Sci jkt. (5 PP agit. 900 gal. 30458 reactor) 900 gal. 30455 reactor, 75 pai/FV int., 150 pai ikl., sgit. 600 gal. 30455 reactor, 300 pai int., 75 pai ikt., colis (3) 500 gal. 30455 reactor, 150 pai int., 150 pai ikt., 5 HP agi 300 gal. 316SS reactor, 75 psi/FV int., 60 psi jkt. (50)... 316SS and 304SS reactors and kettles from gallon to 400 gallon... call for list.

BIG PFAUDLER *31688 REACTORS*

(3) 15,000 gal. Plaudler, 3169S. 12'6"x 15', 100 psl, 200 psl jkt. Agit. (4) 10,000 gal. Pfondlor, 316SS, 11'6"x 12'4", 100 pel, 180 pel, jkt. Agit.

REACTORS-GLASS

2 gal. Pfaudier, 750 psi/FV, 700 psi |kt. 20 gsl. Pfaudier, 35 psi, 100 psi |kt., agit. (2) 30 gal. Pfaudier, 25 psi, 100 psi |kt., agit. (2) 50 gsl. Pfaudier, 25 psi, 100 psi |kt., agit., agit., 1975 100 gsl. Pfaudier, 25 psi/vac., 90 psi |kt., agit. 150 gsl. Pfaudier, 25 psi/vac., 90 psi |kt., agit. 130 gal. Frauder, 25 psi/vac., 90 psi jkt., 2gil. 300 gal. Glascole, 25 psi/vac., 90 psi jkt., vari-drive agit. 500 gal. Plauder, 100 psi/vac., 105 psi jkt., 5 HP agit. 750 gal. Plauder, 25 psi, 85 psi jkt., 5 TW agit. 1,000 gal. Plauder, 75 psi, 90 psi jkt., 10 HP agit. 1,000 gal. Plauder, 75 psi/vac., 90 psi jkt., 10 HP agit. 1,500 gal. DeDietrich, 100 psi/vac., 90 psi jkl., 1981, 1,500 gal. Plauder, 100 psi/vac., 90 psi jkt., 25 kP agit.

2,000 gai. Plauder, 100 psi/vac., 90 psi jkl., 15 HP agit 2,500 gai. Plauder, 150 psi, 90 psi jkl., #TW6 agit. NEW LIQUIDATION! CHEMICAL/POLYMER PLANT....ILLINOIS BUY BEFORE REMOVAL AND SAVE!!

Bird 32"x 50", centrifuges, 316SS, contour (2) Welex 8" Extruder, 700 HP, 30:1 L/D (5) Welex 6" Extruder, 400 HP, 30:1 L/D (2) Conair 24" pelietizer, 40 HP (2) Renneberg 5'x 25' 304 SS rot. hot all

dryers, 10 HP, (3) Sweco & Kason 60" screens, SS (2) K-Tron 7000#/hr. twin screw volumetric

feeder, SS, (5) Pfaudler 1,500 gal. 316L SS reactor, FV/-

180 osi 5 HP agit. (2) Pfaudier 10,000 gal. 316L SS reactor, 150 psi/FV int., 180 psi jkt., hyd agit (4) Worth. Plant air comp., 323 CFM @ 125 psi,

75 HP, Model #4-8B-2 (2)

PERRY for

Process

Equipment

FHONE (609) 267-1600

17,000 gal. & 12,000 gal. 316 SS Tanks (3)

DRYERS Blaw Knox 6'4"x 40" SS vac. dryer, 600 cu. ft.

Blaw Knox 36"x 20' vac. dryer 316L SS, 72 cu. ft. Blaw Knox 66"x 36" vac. dryer, nicke Mathie 24"x48" flaker, chrome plater Sandyik 48"x24" 8S belt flaker, UNUSED Sargent 60" x 45" SS conveyor dryer Stokes 8" x 11" drum flaker Blaw Knox 32" x 90" dbl. drum Buffoyak 42" x 120" dbl. drum, 160 psi Aerometic #ST-5 fluid bed dryer, 5/10 KG Witte 36" x 10' fluid bed, SS, sunit.-coole Stokes 36 sq. ft. Lyophilizer freeze-dryer Renneberg 36" x 20" rotary dryer, 316 SS Renneberg 5'x 25' 304\$8 rol. hot air dryers, w/cyclone, etc. : 96" x 50" Louisville SS rotary dryer 10" x 100" GATX rot, eteam tube dryers, 140 pd (4) Wysemont #VTL-24 Turbo-tray dryer, 30485 P.K 5 cu. ft. yac. dryer, 30488 P-K 20 cu. ft. vac. dryer, 304L 88 (2) Abbe 30 cu. ft. 3045S vac. dryer Devine 110 cu. ft. 304 SS vac. dryer Plaudier 165 cu. ft. glass-steel vac. dryere (2) Abbe 325 cu. ft. 31695 vac. dryer Devine 370 cu. ft. 31698 vac. dryer Devine 564 sq. ft. vac. ahelf dryer

Bowen 96" apray dryer, S9 FILTERS-VACUUM

Niro 30" SS spray dryer

Turbulgire 48" x 7' spray dryer

Bowen 72" spray dryer, SS

36" x 1' Dorr-Oliver, fiber glass 9 sq. ft. 36" x 1' Ametek, 316 SS, 9 sq. ft. 40" x 3' Bird-Young, SS, 48 sq. ft. 4' x 16' Elmco, 316SS, 64 sq. ft., horiz. 6' x 3' Ametak, SS, 35 sq. ft. 6' x 4' Eimco. "Elmcomet" polypropylene, UNUSED 8' x 8' Elmco, SS, 200 sq. ft., precoat 8' x 10' Dorr-Oliver, 250 sq. ft., 316SS, precost 8' x 12' Eimco, 316SS, precost, 300 sq. ft., (3) 6 x 14 Dorr-Oliver, 31689, precoat, 350 aq. ft. (2) 10 x 10 Elmco, 31689, precoat, 350 aq. ft. (2) 10 x 10 Elmco, 31689, precoat, 314 aq. ft. 11 6 x 14 Komine, 30489, 625 aq. ft. (lexibelt disch. (2) 45' dia. Elmoo tilling pan. vac. filler, 316 SS

Doir-Oliver 8' x 12' procest rolary vacuum

Diters, 31695 contacts...Prices Stashed, UIG SAVINGSI

FILTERS-PRESSURE 12 sq. ft. Amatek/Niagara #12, SS
54 sq. ft. Funds, SS, jittd.
65 sq. ft. Funds, SS, jittd.
65 sq. ft. Ardisan "Dynamic" (filter/washer, SS (2)
140 sq. ft. Niagara #38-140 316 SS, sanit.
1000 sq. ft. U.S. Autojet #1000, 304SS
30" Sperry filter press, 11 cu. ft.
36" Shriver filter press, 548 sq. ft., hydraulic
42" Shriver filter press, 777 sq. ft., hydraulic
48" Skriver ALP recessed (filter press, SS, 276 sq. ft.,
48" Poly Filter Co. polypropylane filter press, 2094 sq. ft.,
87 cu. ft. cake, 1983

PULVERIZERS

Mikro #5MA atomizer, 5 HP
Mikro #5MA atomizer, 5 HP
Mikro #20H pulv., SS, 5 HP
Palman #REF8 pulv., 100 HP
Palman #PP6 pulv., 50/76 HP
Abbe porcelain pabble milla... 36"x42", 38"x48",
42"x60", 48"x60", 60"x48" (7)
Raymond 50" 5-roiler hI-side mil., 1981, UNUSED
Raymond #8058 HI-side roiler milla, dbl. whizzer (2)
Raymond #73612 Hi-side roiler milla, dbl. whizzer (2)

NEW LIQUIDATION DRY DETERGENT MFG. EQUIP. ..NORTH JERSEY!

5-Kleissler dust collectors: 2000, 1400, 535 sq. ft. 5-Claveland 120 cu. ft ribbon blenders, 60 HP 5-60° C/C steel bucket elevators 5-Kleisaler bag type dust collectors 2-Box Filling Lines/160, 120 Boxes/Min, 1-J.H.Day 200 gal. algma blade mixer, [ktd., 40 HP 2-Moyno Pump # 1.8580, 5HP. 2-FMC-Stokes form, fill & seal units 2-Erlez #628 vibratory feeder, SS,

1-Hesser volumetric powder carton filter. 2-Standard-Knapp case givers 1-200 gal. SS tank, jkt. & egit.

Over (50) Bird & Sharples decanters

CENTRIFUGES Sharples P-5400 D-Canter, 31855, Carbide tiles, late (2) Sharples P-3400 D-canter, 31655, tiles (2)

Sharples P-5000 D-canter, 316SS Sharples P-660 D-canter, 316SS, back drive Sharptes P-600 D-Canter, 1045, Decarter, 20 HP Bird 12" x 30", 316SS, Decarter, 20 HP Bird 18" x 42" Decarter, steel, 10/30 Bird 24" x 38" Decarter, 304SS, contour-10 Bird 24" x 38" Decarter, 316SS, contour (3) Bird 24" x 60" Decanter, steel Bird 24" x 88" Decanter, SS, 125 HP Bird 24"x 96" decanter, 304SS, carbide tiles, 198

Bird 32" x 50" Decanter, Monel, contour (2) Bird 32" x 50" Decanter, 304SS, contour DeLaval NX214-31B Decanter, 304SS, 20 HP (2) Sharples AS16V "Super," S6 (5) Sharples AS26V "Super," SS

DeLaval BRPX-213-30, 31685 separator/desiudgers (3) Westralls SAMN15037, Desiudger/Separator, 31688 Westralls SA14-35-076 3-way separator, 31688 Krupp 10" pusher, 31688, 15 HP Rrupp 10 pusser, 3 1655, 16 HP Baker-Perkins 19" pueher, 30485, 40 HP Sharples 48" T-1600 auto-basket, 100 HP Tolhuret 48" Batchmaster, rubber lined, 30 HP Sharples 48" Tornado-Matic, 85, 25 HP Delaval 48" Mark 111, 31655 hyd. CENTRIFUGE PARTS... Sharples, Bird, DeLaval, etc.

EVAPORATORS

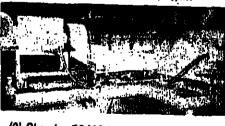
2.4 sq. ft. Rodney-Hunt SS, 3 HP
21 sq. ft. Rodney-Hunt Turbafilm #4, SS
87 sq. ft. Rodney-Hunt, 304 SS, Turbafilm
100 sq. ft. Plaudier, 316L SS, wiped film
600 sq. ft. Goslin-Birmingham dbl. effect, SS
854 sq. ft. Buflovak dbl. effect, SS
1688 sq. ft. Roger dbl. effect, SS
Swenson 316SS continuous crystatilizer, 9" x 14"

TANKS & VESSELS

30,000 gal., 304SS, 14' x 24', colla, 200 HP agit. (4) 20,000 gal., 304SS, 12' x 24' (2) 17,000 gal., 304SS, 11' x 24' (3) 17,000 gal., 318LSS, 14'x 13', Agit. (2) 12,000 gal., 316LSS, 12' x 14', Agit. (5) 10,500 gal., 316L SS, 8' x 25' 10,400 gal., 304SS, 10'6'' x 16', agit. 8,000 gal., 304SS, 10'6" x 12' 5,000 gal., 304SS, 9'x9', 25 HP agit. 3,500 gal., 304SS, 8'x9' 3,000 gal., 304SS, 7'x 10', agit.

MIXERS, BLENDERS

3.5 cu. ft. Henschel #FM15D, 17/20 KW 11.5 cu. ft. Henschel #115JSS, 92/46 HP 13.7 cu. ft. Lodige #W600/K1200, mix/cool comb. 20 cu. ft. P-K twin shell SS 20 cu. ft. P-X twin shell S8
35 cu. ft. Day Neuta, #NBX350, SS
52 cu. ft. Neuta 304SS mixer (2)
60 cu. ft. Gemco, TW SH, Sanit, SS
69 cu. ft. Patterson dbl. cone, SS
70 cu. ft. Day Neuta, #NB700, 10 HP
75 cu. ft. Day Neuta, \$S, jktd.
75 cu. ft. Day Neuta, SS, jktd.
98 cu. ft. Day Neuta, SS, 1981
110 cu. ft. J.H. Day, dbl. ribbon, 316SS
120 cu. ft. Cleveland ribbon blenders (5)
144 cu. ft. 304SS dbl. ribbon blender, 30 HP
169 cu. ft. Pfudler, dbl. cone, glass steel jktd., vacuum
200 cu. ft. Young, ribbon, SS
316 cu. ft. Sprout-Weldron ribbon blender, SS, jktd.



(2) Sharples P3400 D-Canter, 316SS, back drive, little use since rebuilding!

NEW & UNUSED PROCESS EQUIP., 1982. IN ORIGINAL PACKING Phone (609) 267-1600

CENTRIFUGE, Bird 24"x96", 30488, Model 15 solid bowl continuous, 10 dag. contour bowl Tungsten carbide tiles on conveyor, 150 HP CHLORINATION SYSTEM, Wallace & Tiernan COLUMN, 46" dla. x 15'9", 30455

SS shell and lacket, incoloy ribbon and

FEEDERS, Acrison gravimetric weigh feeds Model 403-15,000-3,000-BDF-4, 304SS

MIXER, Air mix blender system, Koppers-Sprot Waldron #36-50, 500 cu.ft., 304SS

tize, shrink wrap, etc. automated system. PULVERIZERS, Mikro #4TH pulverizers, 125 HP drive, (15)

'ACTION SALE' ... CAU, MARICPHARI @ (609) 267 7600

(2) Munson 300 cu.ft. blenders, 104" dia #TS-300GB, pkgd. 1) Munson 110 cu.ft. blender, 90" dia

2) Munson 90 cu.ft. blenders, 80" dle #7TS90, pkgd.

2) 215 cu.ft. Cleveland ribbon blenders (2) Elrich 10' dia. Intensive mix mullers motorized pan and mullers

1) Mikro #8D atomizer pulverizer, 30 HP) Mikro #4TH pulverizer, 50 HP 2) Saw tooth brakers/crushers

tors, 80' powered roller conveyor, etc. bles, equipment, etc.; motor contro center units; Gardner-Denver al compressor; etc., etc.



press, (100) chambers, 2094 sq. ft.,

.. SOUTH CAROLINA, CALL

BALERS, Dispozapak #0600 balers, (2) BAG PACKER, Howe-Richardson #G-S-17 sent automatic bagging system SS contacts BINS, 304L SS contacts, 1300 cu.ft./9720 gal,

CYCLONE, DuCon Model 700/175 304SS No. efficiency cyclones, size 210, Type VM (8) DRYERS. Nooter 4' x 14' rotary vac. dryer, 316

ASME 100 psi/FV int. & jacket. 100 HP

URNACE, C-E Air Co. "Cor-Pak" thermo oxydizers, direct gas tired

MIXERS, Webb, 59" W x 15'L twin shaft peddle mixers or pug mills, 304SS contacts, (2) PACKAGING SYSTEM, design to fill bags, pall-

POLYBREE COMPOUNDING ! PLANT...CARTERET, N.J.

#700/110, pkgd.

2) 400 cu.ft. Gruendler ribbon blenders

2) Komline dbl. cone blenders; 320 cu.ft. (10' dia.), 69 cu.ft. (6' dia.) (3) Gruendler hammermille, 150 HP, 1980 (2) Gruendler hammermille, 100 HP, 60 HP

(2) St. Regis baggers (1) "Push-Pull" ralicar unloading system (25) Flexkleen, Dustex, etc., bag type dust collectors

2) Box sifters (1) Handling system w/(2) 2000 lbs. elet ALSO...laboratory with lab apparatus, la-



Poly Filter Co. 48" polypropylene (III) cu. ft cake, hydraulic... 1983, CALLI

FADE-OMETER i Electric Devices Fade-Ometer, model 18-F FILLERS-BAG

Stoker model CR bag packer, 3" dia. x 1 1" long spout, 20-250 lbs. cap. Stoker model CR bag packer, 3" dia. x 11" long spout, 20-250 lbs. cap. Stoker model 15 VR bag packer, 3" dia. x 9" long spout, 20-250 lbs. cap. Stoker model 15 VR bag packer, 3" dia. x 9" long spout, 20-250 lbs. cap. ER 1 ER — DAINT FILLER-PAINT unbrose filler, model PF-9 pomblex 100KW, 341,200 BTU's, water-glycol heat trensfer system

FILLER-PISTON ndersom model 340-4, S/S, 32 oz. piston, cup filler with plug capper

Eigin Single Piston Filter, nickel, 132 oz. cylinder, no convey Eigin Twin Piston Filter, steinless steel, 2-70 oz. pistons Eight Twin Piston Filler, stainless steel, 2-70 oz. cylinders FILLER-POWDER arsons model C, 10 head filler, 7-14 oz. fill.

B.F. Gump Edibauer-Duplex net weigh, size 3, semi-automatic.
Parsons Model C, 6 head, 7-14 oz. filer ARC Form-A-Matic, model S-77, forms and bottom seals, 35-70 cases/ FILLERS-TUBE Kalox KX-60 metal tube filler, S/S, agitated hopper, 2 to 163 cc full.

GEAR REDUCERS 20 HP exp. proof, 125 RPM output, class 3, horizontal paratiel shaft. 20-10 HP XP, horizontal, paratiel shaft gearhead, 280-140 output RF 7½ HPXP, horizontal, paratiel shaft gearhead, 25 output RPM. GRANULATOR—OSCILLATING Cherry Burrell Model 542, S/S oscillating granulator Cherry Burrell Model 542, S/S oscillating granulator

ardKnapp case sealer, model 462HM, top only, Nordso Cherry Burrell Model 542, S/S oscillating granulator. Cherry Burrell Model 542, S/S oscillating granulator. Cherry Burrell Model 542, S/S oscillating granulator States 48"x30", parforate, 316 S/S, 50 HP XP hydraulic. vesamousus 40 x30 , parrorate, 316 S/S, 50 HP XP hydraulic. Saarples 30" x 16", 316 S/S, solld bowl, top unload, 25 HP. Ada-Lavel disc clarifler, 304 S/S, manual unloading, 71/2 HP TEFC. COATING PANS Cherry Burrell Model 542, S/S oscillating granulator Stokes oscillating granulator, model 43Å, Carbon steel construction. Stokes oscillating granulator, model 43Å, carbon steel construction. GLUER Promes Machinery 38" diameter stainless steel, angular coating pan COMPRESSION SECTIONS

Owers (lilinois inner seel gluer, for jers and bottles. Owens (lilinois inner seel gluer, for jers and bottles. HOMOGENIZERS Screw Conveyor, stainless steel, 7" dia. x 136" long, 6" pitch, 1/2 HP.

Manton-Gaulin homogenizer, 2,500 GPH @ 3,000 PSI, 75 HP. HOT OIL UNITS Sterico 12 KW hotoil unit, 440 volts. KETTLES-MIXING NEW Schold Disperser, model VHS 400, 20 HP explosion proof.

Hockmayer model M. 10 HP XP VS disperser, with tub holder.
UKUSED Hockmayer 200/100 HP XP, tank mount, high speed dis-Hamilton 200 gailon S/S kettle, double motion, 2 HP VS, 45 PSI Jacket. Groen 150 gailon S/S kettle, jacketed, 11/2 HP TA agitation. LABELERS-AUTOMATIC GLUE NUSED Hockmeyer 200/100 HP XP, tank mount, high speed dis-Burt roll through isbeler, model AU 404. LABELER-PRESSURE SENSITIVE Fasson model M-11-R pressure sensitive labeler, 5" max-web width Fasson model M-11-R pressure sensitive tabeler, 5" max, web width LABELER-SEMI-AUTOMATIC Mildodouble drum dryer, 6" dia. x 7" long chrome plated rolls

DUST COLLECTORS Carter-Day dust collector, 170 sq. ft., 1,800 CFM, 71/2 HP motor. EXTRUDER Labelette model 1418 labeler, hot melt, ½ pint to 1 gal. w/sars. LID DROPPERS & CLOSERS

rodex extruder, 31/2", 21:1, 5 zone, 40 HP variable speed.

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perser, 460 V

perser, 460 V.

IR COMPRESSORS

BOILERS-ELECTRIC

BOTTLE CLEANERS

Standard Metal Co. model J1 600 bottle cleaner. BUNDLER

nmil, model UT 12, 12" diameter rotor, 15 HP.

rocess attritor, size 1S, 12 gation, 34 HP explosion proof.

inst Likes bundler, model 500-2, automatic bundler and sleeve wrad

F Consolidated capper, set for 83 mm, 60 caps per minute

ISC Junior lop and bottom case sealer, with cold glue.

Efort model 5200 top only case sealer, pressure glue. Efort model 5200 top only case sealer, with pressure glue.

MILLS-COLLOID Patterson Ind. Tri-Homo coffold mill, 316 S/S, size 10 Tri Homo Corp. colloid mill, 316 S/S, Size: 10, 40 HP. #old mill, 316 S/S, size 10, 40 HP

Premier 316 S/S colloid mill, 10" dia., model KSH, 40 HP. Morehouse B-1400 stone mill, 20 HP explosion proof.
Tri-Homo 5" colloid mill, staintess steel, 5 HP explosion proof MILL-HAMMER

Micro Pulverizer model 3TH, stimup swing hammars, 30 HP. Mikro Pulverizer model 1SH, stainless steel, stimup swing ham MILLS-KADY

MIXERS-PONY

MIXERS-TWIN SHELL

KATI & CONY Kati & Gallon pony mixer, 7½ HP XP, planetary action, 4 tubs. MIXERS—STATIONARY Patterson Unipower, 10 HP TEFC, 39 RPM. Patterson Unipower, 7½ HP TEFC, 28 RPM.

Patterson-Kelley twin shell blender, S/S, 1 cu. ft., L/S bar, UNUSED

Patterson-Kelley twin shell blender, S/S, 1 cu. ft., 550 lbs/cu. ft., XP

Imperial 1,000 gallon cerbon steel mixing tank with 5 HP XP 46 RPM

6.000 gaBon S/Smixing tank, closed top, cone-bottom, ¼ HP 5.75 RPM TANKS-STAINLESS ST. STORAGE

Cherry-Burrell S/S, 6,000 gal., horizontal storage tank, 6" dia. x 19"1. Alloy Fabricators 7,500 gal., 316 S/S, 10" dia. x 12"6" deep. UNSCRAMBLER

illas Weather-Ometer model XW-WR, auto humidily, chart recorder

Schmutz Mig. Co., Inc. top grain oilfset printer, model CM24, 24" wide

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TANKS-JACKETED

Groen 450 gallon, 304 9,15 tank, 15 PSI jacket.

Nooter Mig. Co. 160 gallon 304 5/5 tank, jackted. 34 HP.

United Utensils 100 gal., 316 5/5 tank, 150 PSI jacket.

TANKS-STAINLESS ST., MIXING

5.000.eatens.SS. dividualists classed too. consecution. 14

Northern Conveyor 6 Jane unscrambler, 29" wide. WEATHER-OMETER

recorder.
MISCELLANEOUS

E JLM

Kady milti model 2 BH, 100 gallon batch, 40 HP explosion proof.

MILLS-PEBBLE

OVENS-GAS
Grieve gas oven, max. temp. 850 deg. F, interior 38"W x 26""H x 20"D.
OVENS-ELECTRIC
Blue M 24" x 24" x 48" interior, 316 deg. C
Blue M 25" W x 38" H x 20"D 5/S Interior, 850 deg. F.
Despatch 374"W x 37"3"H x 25"D interior, 850 deg. F.
PUMPS-CENTRIFUGAL, 8/8
Trench & Marine 2" x 1%" S/S centrifugal pump. 1HPTEFC VS.
PUMPS-POSITIVE DISPLACEMENT
Within 3" model II 41/48 gressayer sitel trever. 3 488 exclusion areas. Patterson 6'x5' pebble mill, 504 gallon batch, 25 HP explosion prod J.R. Alsing Engineering 3'x4' pebble mill, 92 gsl. batch, 3 HP XP. Norton pebble mill, 38''x42'', 126 gallon batch, 5 HP explosion pro Paul O. Abbe 30'' dia x 36''L, pebble mill, 45 gall batch, 2 HP TEFC. Viking 3", model LL4 1248, pressure relief valve, 3 HP explosion proof. Viking 2", model K 74288, pressure relief, 5 HP explosion proof. PUMPS-VACUUM Paul O. Abbe 21; x 31/2 pebble mill, 45 gal. batch, 10 HP XP. Steveco 20"x20" pebble mill, 18.5 gallon batch, high stends, 2 HF U.S. Stoneware 27 gal pebble mill, if gallon total, with ½ HP drive.
Paul O. Abbe pebble mill, if gallon total, with ½ HP drive.
Paul O. Abbe 16" x24" pebble mill, 12.5 gallon batch, 1 HP.
Stevco 32" x36" pebble mill, 75 gallon batch, high stands, 5 HP XI PUMPS-VACUUM

Stokes model B126 MICROVAV vacuum pump, 500 CTM, 25 HP.

REACTOR-STAINLESS STEEL

318 S/S reactor, 300 get., 14 7/14.7 PSI, 3 HP explosion proof.

Patterson Foundry 50 gallon, 316 S/S reactor, 109/30 PSI, 2 HP.

Expert 75 gallon, 304 stainless sicel reactor, 275/15 PSI, 3 HP XPVS.

Expert 75 gallon, 304 stainless sicel reactor, 275/15 PSI, 3 HP XPVS.

SIFTERS/SEPARATORS

Gump 318 S/S pressure affer, model CP-32, 36" dia., 34HP, sanitary.

Sweco 60" dia. C/S, single deck, open top, 2½ HP.

TANKS-CARBON STEEL, MIXING

Imperial 1,090 gallon carbon steel mixing tank with 5 HP XP 45 RPM drive. MILLS-THREE ROLL

J.H. Oay 16"x40" three roll mill, 20 HP explosion proof. Kent 4"x8" three roll mill, 14 HP explosion proof. Kent 4"x8" three roll mill, 14 HP explosion proof. MILLS-TWO ROLL Thropp 6"x12" two roll mill 715 Hi VILLS-SAND & SHOT Chicago Boller sand mill, model 16P. Chicago Boiler sand mill, model 3 gellon standard.

Premier 18 gallon closed head media mill, 50 HP explosion proof dr Morehouse-Cowles sand mill, model 12-30, closed head, 40 HP XP Morehouse-Cowles sand mill, model 12-30, closed head, 40 HP XP MILLS-STEEL BALL

MILLS—STEEL BALL
Epworth 4 x5 steel bell mill, 320 gallon batch, 20 HP xP.
Epworth 4 x5 steel ball mill, 320 gallon batch, 20 HP xP.
Patterson 2 x x3 steel ball mill, 74 gallon batch, 7 x HP xP.
Patterson 2 x x3 steel ball mill, 74 gallon batch, 7 x HP xP.
Patterson 2 x x3 steel ball mill, 74 gallon batch, 7 x HP xP.
Patterson 2 x x3 steel ball mill, 74 gallon batch, 7 x HP xP.
Patterson 2 x x3 steel ball mill, 74 gallon batch, 5 HP xP.
MIXERS—BAKERY

lobart 20 quari mixer, model A200, Vs HP 3 speed. Hobart 80 quart mixer, model M-802, 3 HP XP, 4 speed, tall pedest Hobart 80 quart mixer, model M-802, 3 HP XP, 4 speed, tell pedest MIXER-DOUBLE ARM Readco 10 gal, 316 stainless steel double arm mixer, 71/2 HP XP.
MIXERS—DOUBLE RIBBON

Falcon 39 cu. ft., S/S, double, ribbon blender, jacksled, 7½ HP XP. Atles Weather-Ometer model XW-R, auto humidity control, char recorder. MIXERS-PADDLE Paddle Blender, 113 cu. ft. carbon steel, 15 HP

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JUST PURCHASED STOKES MICROVAC VACUUM PUMPS RATED 300 CFM @ 10 MM (6) 412-H-11, (3) 612-H-11

-1.3 cu. ft. Abbe, S.S. with Jkt.

SLENDER-.11 cu. ft. Littleford Model M-5-G, S.S. BLENDER-200 cu. ft. Patterson-Kelley Twin Shell, C/S CENTRIFUGE-48" x30" Western States, Perf, S.S316 CENTRIFUGE-AS-16NF Sharples, 3HP, 15,000 RPM CHILLER, 150 ton Camer, 190507-5-3 Hermetic COMPRESSOR-400 CFM @ 100 PSI Fuller C-80-80H, 100 HP COMPRESSOR-800 CFM @ 125 PSI Clark ICA-6, 150 HP CONDENSOR-165 ag. ft. Karbate, 75/75 PSI CONDENSOR-278 ag. ft. 304 S.S. 175(175 PS) UNUSED(2) CONDENSOR-388 ag. ft. 304 S.S. 150(150 PS) UNUSED(4) ONDENSOR-1636 sq. ft. 316 S.S. 150/150 PSF(3) DRYER-5 cu. (L. Patterson-Kelley Conical S.S. DRYER-20 cu. (L. Economy Conical C/S EVAPORATOR-1 sq. (L. Rodney Hunt 316 S. S. w/Condenser

FILTER-5'6"x8" Bird-Young 304ELC, Rat Vac FILTER-5"-30" Shriver & Sperry units KETTLE-50gal, Mucler S.S. with Double Motion Agit. MILL-SH, 2TH, 4TH Mikro Pulverizers PROCESSOR-5-10 cu. ft. P.K. V-Type S.S. Jkt. Vec. 550 F(4) REACTOR-750 get. glass fined Pfaudler 100 FV/90 (2) REACTOR-2000 get. C/S & S.S. 15/15 PSI (2) TANK-4000 get. Verbed 304 S.S. 25 PSI UNUSED (2) TANK-9500 gal. Honzontal S.S. on soddles VACUUM PUMP-150 CFM (Q 26" Nash H-6. 25 FIP rebuilt VACUUM PUMP-1550 CFM @ 24" Nash H-10, 125 HP

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BLENDERS & MIXERS

-Readco Sigma Blade Mixer 10 gel. SS Qual Level (Like New) -Readco 5 gel. SS jktd. vac. mixer 6 HP Ross 10 gal. Piznetsry Mixer SS
-Baker Perkins 300 gal. Sigma Blade fktd. vsc. mixer
-Readco 3 gat. SS Sigma mixer, iktd.
-Patterson Kelly 1500 cu. ft. CS blender 75 HP
-Paul O. Abbe 90 cu.ft. SS/sanit. [ktd. vsc. blender 50HP
-Naute Mixer 70 cu.ft. SS 10 HP (2)
-Devine 100 cu.ft. Dile Cone Blender, C/S
-Baker Perkins 150 gal. C/S [ktd vsc. flusher

BLENDER----RIBBON Abbe 40 cu. ft. 83 clad ribbon blender Strong-Scott 200 cu.ft. CS ribbon blender J.H. Day 40 cu.ft. Ribbon Blender, S/8 (3)

FILTERS

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Eimco 4x12 Belt Filter

Sperkler Filter Mdl #18-D-4 SS jkt./33012/SS 8-8

U.S. Autojet filter SS 50 sq. ft.

Heccules Filter S05 sq.ft. 316 SS

Bird (Plannevis) Filter SS, 72" wide x 17' long

Sperty 42" Plypro Filter Press 48 Chembers

Shriver 36"ALP 316-SS, 41,48 Chembers (2)

Sultan SS 6"ALP 316-SS, 41,48 Chembers (2)

FILTERS—PRESSURE LEAF

-750 sq.ft. U.S. Autojel, Mcd #750, 316 88

-Pronto Filter 88 30" Dia, 450 psi
-Industrial Filter 100 sq.fi. Type 122 iD 31 Model OMD
-Enzinger leaf filter 88 380 sq.ft.

DRYERS Strong Scott Rotary Vac. Dryer SS 3"x12" Solidaire
Aeromatic Fluid Bed Dryer Lab. Model # ST-16
-Fitzpet/fck Fluid Bed Dryer SS Lab Model # ST-6
-Jeffrey Fluid Bed Dryer 2"x20" SS - (2) Available
-Pfaudler Conical vac. dryer QJ. 72 cu, N. complete system Pfeudler Conical vac. dryer G/L 72 cu. it. complete
D 4W Rotary vac. dryer, 318 89, 2"x 7"
Gemco 83 1 du. it. date. cone vac. dryer
Patterson-Kelly 3 cu. it. twis abell vac dryer 85
Stokes vac aphelf dryers 48.9 sq.ft. (7)
Pfeudler 2.5 cu. it. G/L dbl. cone vac. dryer
Standard Hersey 4"x30" Rotary dryer 85
Bowen Spray Dryers 7½ & 5" 35
Bowen Spray Dryers 7½ & 5" SG.
Patterson-Kelley 5 cu. it. SS Conical Vac Dryer.
Stokes 6"x30" Rotary Vac Dryer, Jittl, 38
Patterson Kelley Twin Shell vac. dryer 78 cu. it.

LISTING **NEW ARRIVALS**

-Chornetron Head Exchanger Scrape Walf 9 sq. ft. -Tolhurat Centrifuge 28" 316 S8 perf. basket -Star S8 Filter Presses 18" (6) -Sharples Centrifuge 12" S9 solid bowl w/sktmmer (2)

-Cowdea disadiver
-Shot Mill 304 SS Rtrd. 100 HP (2)
-Chromolox Hot Oil Heaters 20 & 40 KW
complete system UNUSED
-Patterson Kelly 30 cu. ft. twin shell blender jktd SS w/int. bar
-Patterson 3"x4" ftt. Bal-Mill
-Pk 1 cu. ft. Twin Shell SS 500 lb. Dens. -Mateur Filler Model No. 33A Auger Type, \$8/sanit

-mateur ricer anoder No. 33A Auger 1 yps, 38/38hill
-Patterson Keily 40 cu. (f. Twin Shell Blender SS with Liquid/
Solid Bar
-180 cu. h. Double Cone Blender
-Patterson Keilay Twin Shell 1 cu. ft. vac. processor SS
-Alpine Selve Model # A-32-100 LS
-300 gal. SS Dispersion Tank (50)
-Pattz disintegator SS 5 H.P. 865 R.P.M.
-Autoclave 200 gal. SS 115/350

-Funds filter 4' dla., 28, jktd. w/20 HP Drive -SS Kettles 400, 300, 200, 150 (25) -Artisan 1 sq. ft wiped film evapoyator SS complete system -Ross 15 gal. SS Rtid., mixtruder 7 % HP Ndl. AMK 15 -Milcro Atomizer SS SHP XP Mdl. #5MA -7500 gal. Fiber Glass Tank (8)

CENTRIFUGES -Bird Centrifuge C8 49" x 50" Solid Bowl widrive -Bird Centrifuge C8 18" x28" Contour Bowl (UNUSED) -Bird 38" x50" 34758 Contour Bowl -Sharples 12" SS Lab Model/Birghton Lab -Sharples P-5000 decanter SS 100 HP

GRINDERS & MILLS -Rose 3-roll mill 4½x 10" (2) -Fitzmill MdL No. D-6/DSAO/12 30HP 8S -Simpson Muetter 6"x6" size 2 VD mixer 20 HP

-Graerco Colloid Mill, 3 HP & 5HP PEACTORS

-4000 gel.316 SS reactor 90/500P pel (4)
-Pliatder 2000 gel. [ktd reactor 150 pel/75 pel
-Norwelk 3000 & 760 gel. SS reactor dimple [ktd FV/60
-Plauder 9200 gel 0/L Reactor 90/90 pel Unused
-Downington 1500 gel. Monel Clad reactor 55/70 pel
-13,500 gel. 304 Ein Dirft, Jktd, Reactor, 30/100 pel
-Plauder 500 gel. G/L [ktd. vec. reactor

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November 3, 1986

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November 3, 1986

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Continued on Page 57 TRIPHENYL PHOSPHATE Monsento 1280 bgs (73.54) lbs) (Atlantic Conveyor) Liverpool, 9/29.

UREA HYDROGEN PEROXIDE Autotype 1 cs (1087 lbs) (Allantic Concert) Liverpool, 10/08 VITAMIN B2 Rohm Tech 1 dms (0 lbs) (Kezimertz Pulaski) Rohterdam, 10/07.

VITAMIN B2 M Gurza Custom Brokers 20 dms (1499 lbs) (Bing He) Shanghal, 10/05. VITAMIN 86 Daniel F Young 40 dms (2,557 lbs) (Bing He)

Shanghai, 10/05.
WOOL GREASE Joseph H Lowenstein & Sons 74 dms
(33,461 lbs) (California Star) Felixstowe, 9/26.
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9/29. 400 dms (44,886 lbs) (Ever Uving) Le Havre, 10/05. YERBA MATE Samuel Diaz Pumara 5 cs (254 lbs) (Ameri-can Lancer) Buenos Aires, 10/09. ZANZIBAR CLOVES CG3 Monts J Golombeck, 198 bgs (23,001 lbs) (Oriental Minister) Singapore, 9/30.

Ozone Depletion

Continued from Page 7

tion. Serious ozone depletion would result in a higher incidence of skin cancer among humans and have an adverse impact on plants and marine organisms, scientists say.

Interest in changes in the ozone level has itensified in recent months following the discovery of the ozone "hole" over Antartica, suggesting that atmospheric ozone destruction may be more severe than previously recognized.

Some researchers have suggested that the ozone depletion is due primarily due to manmade chemical pollutants, such as chloroflu-

Mr. Callis says his analysis of satellite observations indicates increases of up to 75 percent in nitrogen dioxide in the stratosphere between 1979 and 1984.

The nitrogen dioxide was formed by solar energy, and led to the formation of other nitrogen compounds known to promote ozone destruction, Mr. Callis explains.

Although the cause of ozone depletion has not been conclusively pinpointed, the major US producers of chlorofluorocarbons recently said they would support, if necessary, a global limit on the future rate of growth of CFC production capacity.



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PERFUMES & FLAVORS

Continued from Page 47

same basis. Imports reportedly remained seady, however, and industry sources cite geral influences behind the increase.
The primary influence, according to an

esential oils broker, is the growing buying interest in China and Japan. "The Japanese are importing more and more ocotea cymbrum oil for heliotropine production," he sys, "and this affects the prices the Brazil-

China is the major competition with Brazil on the international market, yet it imports the Brazilian material, like Japan, for he-assisting its decline on the US market. intropine production. "The Chinese have been importing the ocotea," says another boker, "In steadily increasing amounts."

112,248 pounds in 1985 and are on track to

\$9 per pound is an average spot quote. Another factor helping to firm the Brazilian ocotea's pricing is the steady decline of Chinese ocotea imported to the US over the past few years. In 1983 36 metric tons of ocotea cymbarum oil were brought in to the US, in 1984 13 metric tons, and in 1985 less

ported from January through September, 1986. The price has held steady despite the

indication that production will be stepped up:

than 2 metric tons were imported. The Brazilian ocotea cymbarum with a minimum 84 percent safrole has been absorbing the US market left behind by the Chinese material. The Chinese ocotea, 90 percent safrole minimum, is reportedly used in fewer applications than the Brazilian, thus

SEEDS AND SPICES

ANISE SEED — Spot prices for anise seed Heliotropine imports to the US were from Turkey have been steadily rising for the past three months. An average quote for gaich that figure with 231,600 pounds im- Turkish recleaned anise seed on August 1,

CHEMICAL PROFILE

Continued non-rage co
Union Carbide, Texas City, Tex. (E, c). 195 Union Texas, Gelsmar, La., (E, c). 35 Unocal, Beaumont, Tex., (R, c). 65 USX (USS Chemicals, Houston, Tex. (R, p). 164 USX (Marathon Oil), Detroit, Mich. (R, c). 128 USS (Marathon Oil), Garyville, La. (R, c). 110
USX (Marathon Oli), Texas City, Tex. (R, c)
Total

'Millons of pounds per year for chemical use: E, from ethylene units; R, from refinery operations; r, refinery grade; c, chemical grade; p, polymer grade. Actual propylene yield varies widely depending on feedstock and operating conditions. Most capacles listed represent maximum output, and may be overstated. Over 400-million pounds of propylene capacity was closed at Du Pont's Chocolate Bayou plant last year. Kill Petroleum bought Charter's assets in March, 1986. Enron Chemical has een purchased by National Distillers. The deal will be completed shortly. Enterprise will boost its Mont Belvieu propylene capacity to 650-million pounds by January 1 1997. Exxon dedicated a propylene concentrator at Baytown in September 1986 that boosted capacity there by 400-million-pounds-per-year of polymer grade material Shell's Deer Park capacity includes a unit that's been idled since 1981. Texaco has an kiled clefins plant at Port Neches, Tex. Carbide closed its Penuelas, P.R. operalion early last year. USX is spinning off most of its chemical operations to form Aristech Chemical Corporation. The new firm will be formed later this year. Union Texas is partly owned by Allied-Signal, Borg-Warner and BASF. Texas City Refining is owned by Agway and Southern States Cooperative. Profile last published 10/10/

1985: 14.7 billion pounds; 1986: 15.1 billion pounds; 1990: 17 billion pounds.

Historical (1976-1985): 2.7 percent per year; future: 3 percent per year

Historical (1974-1986): High, polymer grade, 26 cents per pound, f.o.b. Gulf Coast; chemical grade, 24 cents per pound, same basis. Low, polymer grade, 3.33 cents per pound, f.o.b. Gulf Coast; chemical grade, 8.75c. per pound, same basis. Current: polymer grade, 10c. to 101/2c. per pound, f.o.b. Gulf Coast; chemical grade, 91/2c. per pound, same basis.

Polypropylene, 36 percent; acrylonitrile; 16 percent; propylene oxide, 11 percent; cumene, 8 percent; Isopropanol, 6 percent; oligimers, 6 percent; acrylic acid, 3 percent; export, 1 percent; other, 5 percent.

Polypropylene is growing at a double digit rate in 1986. Demand is also strong for propylene oxide, cumene, isopropanol, and the oxo-alcohols. Propylene tightness in Europe has led to a large surge in US exports to the continent.

The collapse in crude oil prices earlier this year, coupled with propylene upply, has led to a sharp decline in propylene prices. Chemical grade propylene prices have fallen from 16 cents per pound in January to 91/2 cents at present. Poor pricing in the acrylonitrile export market has also held propylene

1 OUTLOOK

Polypropylene will remain in very strong demand around the world, but its absolute growth will be constrained by supply. Other major and uses for propylene will trade to the constrained by supply. the will track the GNP. US industry, with its large supply of refinery propylene, will be the world's major supply source for propylene and its leading derivatives: 1986 was 80c. to 85c. per pound. Last week the spot price increased 8c. to \$1.08 per

Sources relate a limited 1986 crop as being behind the market tightness and indicate that supply problems from origin could continue. One industry source claims Turkey's current problems are linked to the small amounts of material capable of passing FDA regulations

instituted last May. Anise seed imports from January through July, 1986 were down almost 20 percent from the same period in 1985, reflecting the Turkish scarcity. Imports through July of this vear totalled 949,431 pounds, last year: 1.180,093 pounds.

Spanish anise seed spot prices followed the Turkish advances. Spanish anise is priced at \$1.10 per pound to \$1.13 per pound, higher than the Turkish seed because it has been a traditionally smaller crop. Spot prices as of counter any problems.

August 1, 1986 for Spanish anise seed were 90c. to 95c. per pound.

FENNEL SEED — Indian fennel seed prices jumped 6c. per pound last week to 88c. per pound and 95c. per pound for recleaned. Increases were reportedly due to a smaller than expected Indian harvest and greater scrutiny of fennel seed imports by FDA.

"At the end of the year," says a spice broker, "fennel imports have contained admixtures, such as stems and leaves. The FDA is trying to guarantee a more uniform import." The result is to put pressure on the importers and shippers who stand to lose out if the fennel isn't up to specifications.

"There's less recleaning work at this end," says a spice importer, "but it puts the shippers at risk." The firming is due to less availability, he adds, and to buyers paying more to ensure that their products won't en-

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ADVERTISERS' INDEX

Kalser Chemicals43 Atomergic Chemetals Corp. 24

BP Chemicals Americas Inc. 20

BASF Wyendotte Corp. 20,45

Balfour, Maclaine Chemicals Inc. 28 PPG Industries, inc., Chemical Div. Geo. Pieu's Sons Co., inc. . Pharmschem Laboratories Calabrian International Corp.
Chamcantral Corporation
Chembesign Corporation
Chemical Dynamics Corp.
Church & Dwight Co., Inc. R.I.T.A. Corporation . and Chemical Company, Inc. . S.8.T. Corp. 23,27 Sheffleid Products 24 Sherex Chemical & Co., Inc. 13 Deepwater Chemical Co., Ltd. WR Grace Grain Processing Corpor Grant Chemical Division, Greeff, R.W. & Co., Inc.. Helco, Inc.37 Hoechat.....15 Hoffmann-Le Roche, Inc......25 Huis Humphrey Chemical Co. Industrial Raw Materials Corp. Inland Packeging Inc.

November 3, 1986

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Arco, Houston, Tex. (R, r)	
Arco, Wilmington, Calif. (R, r)	
Ashland, Catlettsburg, Ky. (R, r)	500
Champlin, Corpus Christi, Tex. (R, r)	174
Chevron, Cedar Bayou, Tex. (E, p)	635
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Chevron, Philadeiphia, Pa. (R, r)	180
Chevron, Port Arthur, Tex. (E and R, p)	450
Chevron, Richmond, Calif. (R, r).	190
Clark, Blue Island, III. (R, r)	70
Clark, Wood River, III. (R, r)	85
Coastal, Corpus Christi, Tex. (R, r)	55
Coastal, Westville, N.J. (R, r)	
Corpus Christi Petrochemical, Corpus Christi, Tex	v /F n\ 800
Cosden, Bay Spring, Tex. (R, c)	61
Cosden, Port Arthur, Tex. (R, c,r)	140
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ו Pow, Plaquemine, La. (E. מ)	700
Du Pont, Chocolate Bayou, Tex. (E, c)	670
Du Pont, Orange, Tex. (E, c)	100
Eastman, Longview, Tex. (£, c,p)	600
El Paso, Odessa, Tex. (E, p)	470
Enron, Clinton, Iowa (E, c)	
Enron, Morris, III. (E, p)	
Enterprise, Mont Belvieu, Tex. (R, p).	
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EXXVII, DAVIDWII, TEX. (E. ANG R. n.c.)	1.000
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Koch, Corpus Christi, Tex. (R, r).	
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Texaco, Port Arthur, (E, c). Texas City Refining Texas City, Toy (D. a)	
Union Carbide, Taft, La. (E, c)	•••••••••••••••••••••••••••••••••••••••

Continued on Page 65

Vulcan's Chemical

about 1.8 million to 1.9 million this year, Mr.

Bailey sald. The Vulcan official noted that eventually the Senate and House bills will be combined in some kind of compromise, but meanwhile, Federal funding has become only a 20 percent portion of overall highway spending,

Continued from Page 9

versus 50 percent in earlier years. The decine in housing starts will affect mostly multi-family dwellings which use far less construction materials per unit than do single-family houses, Mr. Balley explained.

Williams J. Grayson, Jr., executive vicepresident of corporate development, noted that the company has a 15 percent market share in recycling aluminum, an industry that has about 50 competitors operating at about 50 percent of capacvity.

Vulcan does 80 percent of all detinning in the US and 100 percent of UK detinning, Mr. Grayson said. In the tin chemicals business, Vulcan was said to have a 40 percent market

Peter J. Clemens, 3rd, senior vice-president of finance, noted that a \$2 million improvement in chemical earnings in the latest quarter was entirely due to the lower production costs stemming from the new cogeneration project at Geismar.

Mr. Clemens observed that the compan still has an authorization to purchase 391,000 of its shares out of a total authorization of 1 million which went into effect earlier this

On Friday, the day following the NYSSA meeting. Vulcan announced that this Wednesday, November 5, it will commence a "Dutch auction" cash self tender for between 250,000 and 1 million shares of its common stock. There are outstanding approximately 11 million shares of Vulcan common stock.

Pursuant to the tender offer, Vulcan will invite its shareholders to tender shares at prices not in excess of \$124 nor less than \$119 per share, specified by the tender holders.

Based upon the number of shares tendered and the prices specified by the shareholders, Vulcan will then determine the price per share that it will pay for the shares in cash. Vulcan will select a per-share price so as to enable it to purchase at least 250,000 shares if that number of shares are tendered.

Pollution Firm Acquired by IT

International Technology Corporation last week reported it acquired New England Pollution Control Company, Inc. Terms of the cash transaction were not disclosed.

Nepcco primarily is involved in environmental remediation operations with special expertise in the treatment and recovery of groundwater. The company, with 70 cmployees and offices in the states of Connecticut, New York, New Jersey and Florida has annual sales of \$10 million.

"Nepcco provides IT with geographic expansion in the northeastern United States and

Florida while complementing our exists remediation, emergency response and groundwater recovery and treatment achieves the Hutchican Vivianian Complements of the Property of ties," said Murray H. Hutchison, IT's Chi man and Chief Executive Officer.

International Technology Corporation based in Torrance, Cal., is the nation's lead ing firm dealing exclusively with the maagement of environmentally hazardous terials for government and industry the company's common stock is traded on the New York Stock Exchange under the symbol

Biotechnology **Venture Formed** To Make Flavors

Igene Biotechnology, Inc. (NASDAQ IGNE), has formed a joint venture with Biosoph Laboratories SARL, Le Pag France to manufacture and markel mi urally fermented products for the favors and fragrances industry worldwik Biosoph Laboratories is a member of the Burmah Group of Companies and and sidiary of Burmah Francee SA.

Molecules Naturelles SA, the new conpany to be created by the venture, will be headquartered in Paris, with manufacturity operations in Rouen, France. Manufactur will be conducted by Molecules Naturella with the assistance of Igene and Blosoph Lab oratories. All necessary government a provals required under French law are o pected shortly.

US operations will be conducted through wholly-owned subsidiary, Molecules N turelles, Inc., based in Columbia, Md % other terms of the agreement were a

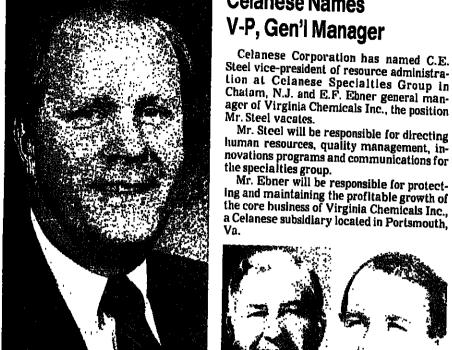
"Molecules Naturelles will use Igene's prietary microbial technology to profe natural substances designed to replace w ous petroleum-based chemicals now used the manufacture of flavors and fragrams says Robert Austin Milch, chairmanofles Biotechnology, Inc.

Dr. Milch estimates the worldwide mark for natural flavor at approximately 🕮 million, with Europe and the US account for the bulk of these sales. "We expect toba initial products available for sale in Eury and the US early next year," he says.

According to J.G. Griffiths, managing rector of Burmah Castrol Europe Limit Swindon, England, "The joint venture repr sents an important new development is Burmah France following the formations Biosoph Laboratories in France earlier!

Jean-Paul Richter, president and direct eneral designate of Molecules Naturals SA, said that the new company "intends" capitalize both Igene's demonstrated exper tise in developing novel microorganisms a fermentation products and Biosoph strengths and experience in esterification

JOBS & PEOPLE {{{{}}}} JOBS & PEOPLE Celanese Names V-P, Gen'l Manager



tawrence F. Doyle, who has been appointed vice-president of human resources for the chemicals and plastics business group of Union Carbide Corporation. Mr. Doyle was formerly director of human resources for Carbide.

DR. CAMPBELL HAWKINS has been appointed director of corporate technology at international Group, Inc. of Agincourt, Ontario, and Lyndhurst, N.J... LAWRENCE MASCERA has been named general manager of Belvidere operations at Hoffmann-La doche Inc... NORMAN J. BROZENICK has been named regional sales manager of the

BUSINESS BRIEFS

ration for the Detroit area. RANDI LEVINE has been appointed sales representative for the West Coast region in the Pigments Division of Degussa Corporation... VERNON E. KARRIS has been named regional sales manager of Unicore Chemical,

Plastics & Rubber Division of Mobay Corpo-



ilment to US markets," BASFsays.

has appointed Fairway Corporation of

losion as its sales agent in the Southwest.

a subsidiary of Unicore, Inc... JOSEPH M. DIBUSSOLO has been appointed project marketing manager in the Corporate Devel-

ager of Virginia Chemicals Inc., the position

Mr. Steel will be responsible for directing

numan resources, quality management, in-

Mr. Ebner will be responsible for protect-

ing and maintaining the profitable growth of

the core business of Virginia Chemicals Inc.,

a Celanese subsidiary located in Portsmouth,

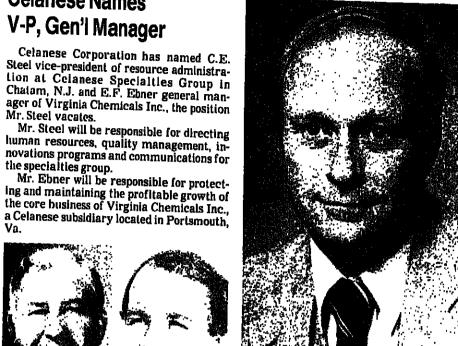
Mr. Steel vacates.

the specialties group.

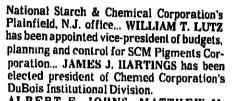


opment Division of PQ Corporation. DONALD S. SOBOCINSKI has been named sales representative for the Midwest area at the Organic Chemicals Division of Pennwait Corporation... B. B. BRADD has been appointed plant manager of Eticam's new facility in Fernley, Nev... WILLIAM E. MELBY ias been elected chairman of the board of

JOSEPH K. KAMIENSKI has been named manager of the accounting department at



A.B. Cochrane, who has been appointed keting director of chioralkali products in the chemicals group of Olin Corporation. He was most recently chloralkali marketing manager.



ALBERT F. JOHNS, MATTHEW M. SNYDER and FRANK ALVARADO have been appointed division managers for Princeton Pharmaceutical Products, a division of Squibb Corporation, SANDRA DI-CLEMENTE has been named regional sales director for the Western region and STEVE LEATHERMAN has been appointed mental health division manager.

Betz Laboratories has appointed R.



Degen Co. Names V-P, Sales Manager

Degen Company has appointed Robert G. Russo senior vice-president and Joseph A. Mele regional sales manager for the North-Central and Northeast areas.

Mr. Russo will retain his responsibilities as vice-president of sales and marketing while assuming those of the senior executive of the

Mr. Mele joins Degen from a background in sales and marketing to the printing ink and specialty coating industry and will be working out of Degen's New Jersey office.



SEGADA district manager for the Pittsburgh area, J.G. SPAGNUOLO district manager for the Cleveland area and S.J. KRAY-NAK district manager for the Gateway area.



BUSINESS BRIEFS

ROBIN C. PAUL has been named deputy chairman and managing director of London-based Albright & Wilson Ltd., a wholly owned subsidiary of Tenneco Inc... EARL A. CLEN-DANIEL has been appointed vice-president and manager of marketing and sales for the Tar & Wood Products Division of Koppers Company, Inc... CHRISTOPHER E. GIB-SON has been appointed director of market development in the Printing Products & Graphics Imaging Systems Division of East-

MEETINGS CALENDAR

THIS WEEK

AMERICAN SOCIETY FOR TESTING AND MATERIALS, 7th Symposium on Pesticide Formulations and Appli-cation Systems Phoenix Hilton, Phoenix, Ariz.,

business school, personal computers in the work-place. Scannicon Executive Conference Center, Princeten, N.J., November 5-7 SMETIC, TOILETRY & FRAGE scientific conference and exhibit, J.W. Marriott Hotel.

Washington D.C. November 2-5. K-'86. (Gth international trade fair for plastics and rubber. Dusseldorf, Wost Germany, November 6-13

NATIONAL PAINT & COATINGS ASSOCIATION, 99th FRAGRANCE MATERIALS ASSOCIATION OF THE annual meeting, Atlanta Hilton Hotel, Atlanta, Ga.,

THIS MONTH

AMERICAN PETROLEUM INSTITUTE, annual incoling.

CHEMICAL MANUFACTURERS ASSOCIATION, chemical industry conference. Palmer House Hotel, November 17-18, Chicago, III. DRUG, CHEMICAL & ALLIED TRADES ASSOCIATION,

Fall luncheon, Waldorf-Astoria Hotel, New York

CHEMICAL MARKETING RESEARCH ASSOCIATION. DRY COLOR MANUFACTURERS ASSOCIATION, lechnical seminar, requirements under the Toxic Sub-stances Control Act, Hilton Gateway Hotel, Gateway Center, Newark, N.J., November 12

EUROPEAN PETROCHEMICAL ASSOCIATION, Intermodel transport seminar, Frankfurt Sheraton Hotel, Frankfurt, West Germany, November 20-21. FERTILIZER ROUND TABLE, Sheraton Inner Harbor Hotel. Ballimore, Md., November 17-19

UNITED STATES, 10th International congress of essential cils, fragrances and flavors, Omni Shoreham Hotel, headquarters hotel, Washington, D.C., Novem-

LATIN AMERICAN PETROCHEMICAL ASSOCIATION, sixth annual meeting. Rio Pelace Hotel, Rio de Janeiro, Brazil, November 23-25.

SALES ASSOCIATION OF THE CHEMICAL INDUSTRY. CHEMICAL MARKETING RESEARCH ASSOCIA annual luncheon meeting. Bethwood, Totowa, N.J.,

DECEMBER

CHEMICAL SPECIALTIES MANUFACTURERS ASSOCI-ATION, 73rd annual meeting, Marriott's Harbor Beach Resort, Fort Lauderdale, Fla., December 7-11.

annual Christmas party, New York Hillon Hotel, New

York. December 18; education committee, seminar, "The Psychology of Selling," Treadway Inn, Saddle Brook, N.J., December 18.

LATER ON

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS center for chemical process safety, international corlerence on chemical safety issues. Omni Shoreham Hotel Washington, D.C., February 3-5. Houston Meeting: "The US Chemical Industry sponding to Change." Westin Galleria Hotel, Hotel Tex., February 4-5, 1987.

November 3, 198

tel. Washington, D.C., March 15-19.
DRUG, CHEMICAL & ALLIED TRADES ASSOCIATED

solum on energy from blomass and wastes it Royal Plaza, Walt Disney World Village, Buent Va

FIB., February 2-6.

SOAP AND DETERGENT ASSOCIATION, 60th Into
Meeting and Industry Convention. Boca Ration Ha
and Club, Boca Ration, Fla., January 29 February
1987

alkyd and polyester resins. CHEMICAL DYNAMICS Corporation has NORANDA MINES, Toronto, Canada, says-Cincinneti, Ohio, February 2-6.
THE FERTILIZER INSTITUTE, 1987 Avrila Manual Property of Control Oriento Control Control Oriento Control Control Oriento Contr

LASF CORPORATION has formed a new search, development and manufacturing, in- in the same period of 1985, despite strikes at search, development and manufacturing, in the company's electrolytic zinc, lumber and sunit specialization. It is the company's electrolytic zinc, lumber and cluding over 2,200 new products. The 750best unit specializing in the market development and sold hisclion molding, blow molding and extruminderlects the company of the business in the company of the compan any's "continuing com- its South Plainfield, N.J., office.

L CHEMICAL Company, Glenshaw, has appointed Fairway Corporation of products, UHF 1100 and UHF 1500, with melt products, UHF 1100 and UHF 1500, with melt products, UHF 1100 and UHF 1500. limited maintains a warehouse facility in tra high flow products are commercially tra high flow products are commercially tracked tracking the product of additive packlingion, produces pipe coatings, industrial available with a variety of additive packshes, electrical insulating varnishes and available with a variety of available with a

liked its 1986-87 "Chemalog" handbook, net income in the third quarter was \$4.7 million aduling over 10,000 chemicals for relion, as compared with a loss of \$30.6 million

DUAKER CHEMICAL COMPANY Conhohocken, Pa., lifted its third-quarter sales to \$31,611,000 from \$30,414,000 a year earller and its net income increased to \$2,115,000 from \$1,589,000, reports Peter A. Benoliel, chairman of the specialty chemical company. Mr. Benoliel cited strength in international operations and favorable cur-rency trends, and he expressed confidence in the company's expectations for the balance of the year.

REICHHOLD CHEMICALS INC. has published a new prochure describing how

resurface concrete bridge decks quickly durment and sales of TPU "Elastollan" for the numbers, physical properties, structures and filed on molding blow "Elastollan" for the numbers, physical properties, structures and numbers, physical physica resin for the manufacture of both onyx and castings, vanities and large tubs, according

> WITCO CORPORATION'S Argus Division has established a statistical process control. program for the manufacture of "Pearsall". sluminum chloride. The program centers on the use of process control charts at the divinon's Brainards, N.J., and La Porte, Tex., plants to monitor product consistency. Pearsall aluminum chloride is used as a catalyst to make ethyl benzene, tackifler resins and oll additives.

CHEMICAL MARKETING REPORTER

CHEMICAL MARKETING REPORTER

November 3, 1988

FERTILIZER INSTITUTE, 1987 annual meeting.

TORS, 15th annual meeting, Ritz-Carlton-Naples Hotel, Naples, Fla., December 2-6.

SALES ASSOCIATION OF CHEMICAL INDUSTRY, annual Christman parts Name of the CHEMICAL INDUSTRY,

SOCIETY OF THE PLASTICS INDUSTRY, 420 conference of the reinforced pleatics and compared institute, Cincinnati Convention & Exhibition Cal